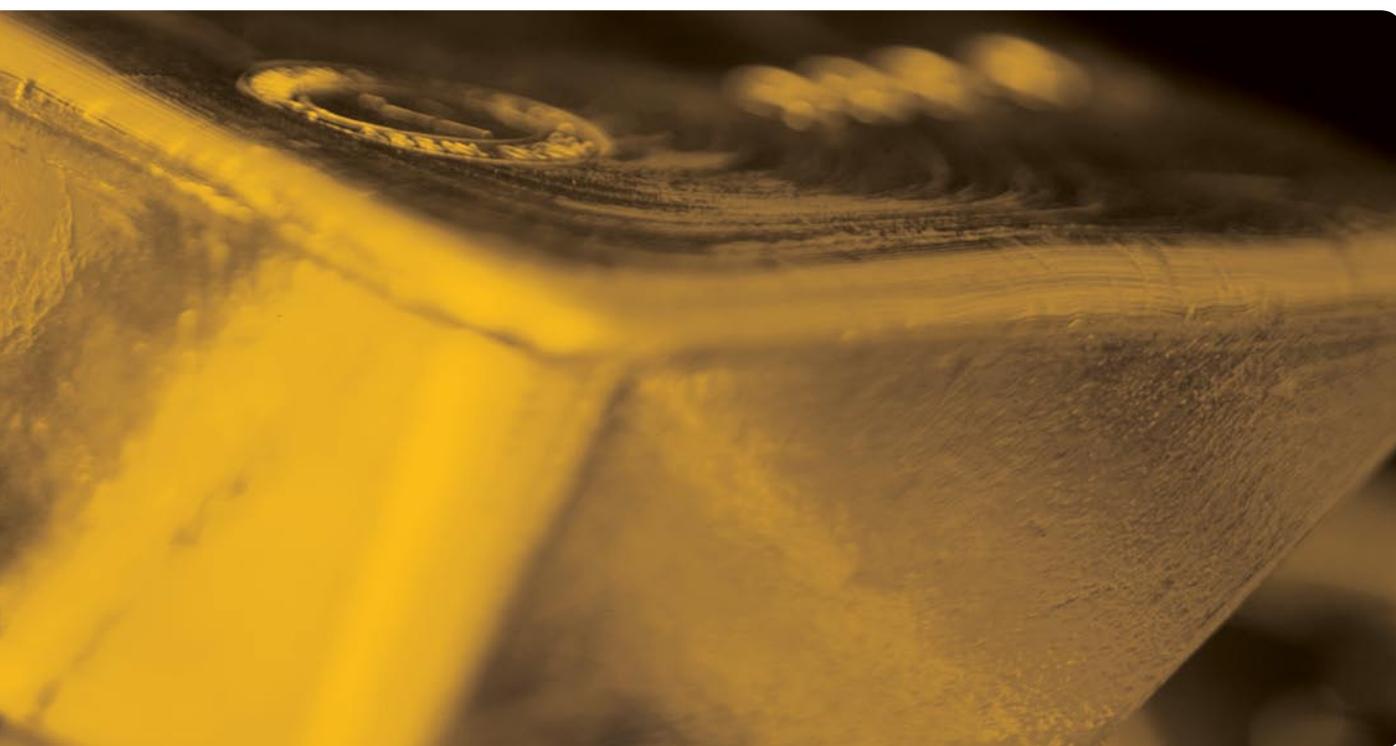


WORLD GOLD COUNCIL

**CHINA GOLD REPORT**  
Gold in the Year of the Tiger



## About The World Gold Council

The World Gold Council's mission is to stimulate and sustain the demand for gold and to create enduring value for its stakeholders. The organisation represents the world's leading gold mining companies, who produce more than 60% of the world's annual gold production in a responsible manner and whose Chairmen and CEOs form the Board of the World Gold Council (WGC).

As the gold industry's key market development body, WGC works with multiple partners to create structural shifts in demand and to promote the use of gold in all its forms; as an investment by opening new market channels and making gold's wealth preservation qualities better understood; in jewellery through the development of the premium market and the protection of the mass market; in industry through the development of the electronics market and the support of emerging technologies and in government affairs through engagement in macro-economic policy issues, lowering regulatory barriers to gold ownership and the promotion of gold as a reserve asset.

The WGC is a commercially-driven organisation and is focussed on creating a new prominence for gold. It has its headquarters in London and operations in the key gold demand centres of India, China, the Middle East and United States. The WGC is the leading source of independent research and knowledge on the international gold market and on gold's role in meeting the social and economic demands of society.

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## Gold in the Year of the Tiger

Eily Ong, World Gold Council

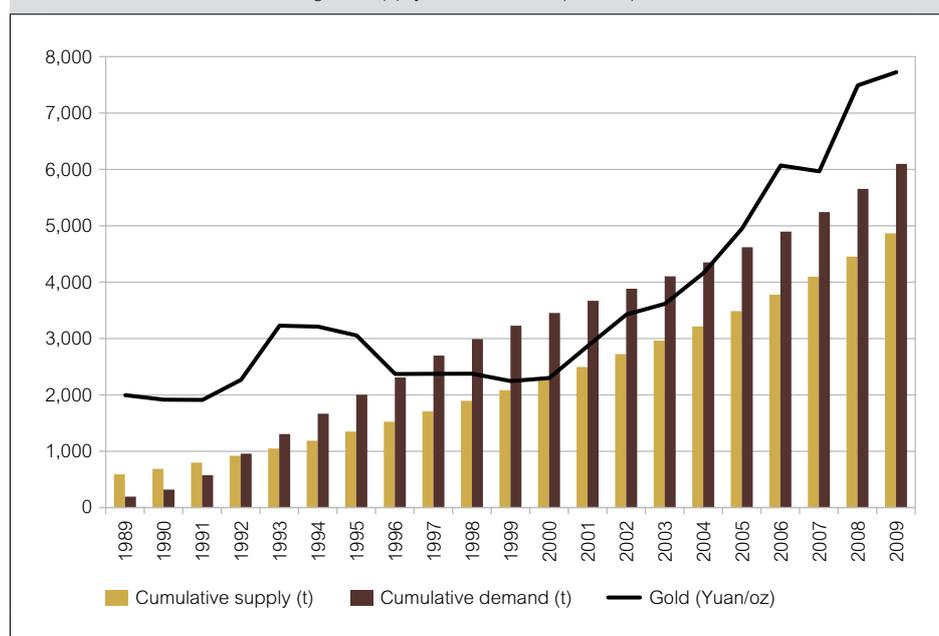
### Executive summary

The World Gold Council (WGC) believes that gold consumption in China will continue to catch up with the rest of the world following the deregulation of the Chinese gold market in 2001. Demand from China's two largest sectors (jewellery and investment) reached a combined total of 428 tonnes in 2009 but domestic mine supply contributed only 314 tonnes during the same year. This shortfall creates a "snowball" effect as China's gold industry may not be able to keep pace with the annual leap in domestic consumption despite rising to be the world's largest gold producer since 2007.

Today, gold is regarded as a sign of prosperity, an ornament, a currency and an integral part of Chinese religion.

Although the country's appetite for gold has grown, making China the second largest consumer in the world, demand in China per capita has a lot of catching up to do to equal that of Western economies. In jewellery, the Chinese per capita consumption is one of the lowest at 0.26gm when compared to countries with similar gold cultures. If gold were consumed at the same rate per capita as in India, Hong Kong or Saudi Arabia, annual Chinese demand could increase by at least 100 tonnes to as much as 4,000 tonnes in this sector alone. Near-term inflationary expectations and rising income levels are likely to support

Chart 1: Gold and cumulative gold supply and demand (tonnes) in China



Source: GFMS Limited, WGC estimates, the BLOOMBERG PROFESSIONAL™ service

the investment case for gold as an asset class, especially given that Chinese consumers are high savers and are looking to gold to protect their wealth.

The People's Bank of China (PBoC) is also playing an increasingly supportive role for gold on the demand side. PBoC's gold holdings are currently at 1.6% of its US\$2.4tn total reserves – a fraction by international standards. If PBoC decides to rebalance its books to its recent peak gold holding as a proportion of reserves of 2.2% in Q4 2002, WGC estimates it could account for a total incremental demand of 400 tonnes at the current gold price.

WGC analysis shows that, structurally, supply growth in China could be challenging unless there is more funding directed to exploration. Assuming the US Geological Survey's figures are correct, China may exhaust existing gold mines in just six years. Despite the strong Yuan, total production costs have also risen by more than 30% in the last six years due to higher input costs (such as energy and labour) and lower ore grades.

The outlook for gold in China remains positive and WGC believes that the balance between demand and supply in the Chinese gold market will continue to be in disequilibrium.

In the longer term, if China continues to grow at near to the current rate in economic and wealth terms, gold consumption in China will continue to expand and has the potential to double during the next decade.

## Introduction

Gold plays a vital role in Chinese culture. The Chinese have a strong affinity to gold when compared with Western countries. Gold has been present in Chinese history since the time of the Han Dynasty and even today is regarded as a sign of prosperity, an ornament, a currency and an inherent part of Chinese religion. Weddings are important gold-buying occasions amongst the Chinese. Gold is also traditionally bought as a gift during the Chinese New Year.

According to the Chinese lunar calendar, 2010 is the Year of the Tiger and the year which started on 14 February 2010, promises to be a year of excitement, prosperity and potential good luck for almost everyone. Those who make a real effort will enjoy an auspicious wave of success when the brave and resilient Tiger rules. Some Chinese also describe 2010 as the Golden Tiger Year.

Today, China is the second largest gold consumption market and the world's largest producer. Gold demand from China's two largest sectors, (jewellery and investment) reached a combined total of 428 tonnes in 2009. However, total domestic mine supply contributed only 314 tonnes during the same year. WGC studies indicate that in the long term, gold demand is likely to continue to accelerate, driven by investment demand in China, while current jewellery consumption is likely to continue to grow despite higher gold prices. Gold could also gain further momentum from central bank purchasing.

We believe that since the abolition of the ban on the private ownership of gold investment products in China, Chinese gold demand is catching up with Western consumption levels. This is because market liberalisation tends to have a dramatic impact in a local market. In India, for example, its gold consumption more than doubled from around 300 tonnes in the early 1990s to over 700 tonnes at the end of 2008 when the liberalisation process was in full swing. WGC estimates that a substantial increase in gold demand would take place if demand in China were to rise to Japanese, USA or Taiwanese levels. In this case, total annual incremental demand ranges from another 1,000 tonnes at USA and Japanese per capita consumption levels, and still more, if Chinese consumption per capita were to rise to Taiwanese levels.

Jewellery is by far the most dominant category of Chinese gold demand, accounting for almost 80% of all gold consumption in China in 2009. Chinese gold jewellery off-take increased 6% year-on-year to 347.1 tonnes in 2009 and China was the only country to experience an improvement in jewellery demand last year. WGC estimates that current per capita consumption of gold jewellery in China is around 0.26gm. This level is low when compared to countries with similar gold cultures. If gold were consumed in China at the same rate per capita as in India, Hong Kong or Saudi Arabia, annual Chinese demand could increase by at least 100 tonnes to as much as 4,000 tonnes in the jewellery sector alone.

China currently ranks fourth in annual retail investment demand in the world, behind Germany, the USA and Switzerland. Gold investment demand in China entered a new era with the opening of the Shanghai Gold Exchange in 2002. At the end of 2009, China's net retail investment in gold totalled 80.5 tonnes, up 22% year-on-year. Chinese consumers are typically high savers and gold investment amongst private individuals in China is developing rapidly. Going forward, we believe that Chinese gold investment demand could be supported by higher wealth and incomes and near-term inflationary expectations. Total gold investment demand in China has grown in line with the country's GDP and population since 2001 and we expect this trend to continue in future. Gold's lower comparative volatility and low to negative correlations with mainstream financial asset classes make it attractive as a risk management vehicle for both institutional and retail investors in China.

Chinese gold consumption in industrial applications has been steadily growing over the past ten years. Nevertheless, industrial demand for gold in China has lagged behind the Western world, but it is potentially a booming market in the future owing to the ongoing rise of Chinese living standards and China's rise as the world's manufacturing centre. Electronics continues to dominate the domestic industrial demand landscape. Over the medium term, industrial demand is likely to improve as global economic conditions and Chinese exports improve. Longer term, industrial demand for gold is likely to rise following the potential launch of gold auto catalysts to reduce carbon monoxide emissions, and growth in mobile phone usage which is set to multiply among an expanding Chinese middle class.

China is the sixth largest official holder of gold, after the USA, Germany, the IMF, Italy and France. The gold reserves of the People's Bank of China, (PBoC) as a percentage of total reserves are low by international standards, currently at 1.6%. WGC believes that there is ample scope for further growth as China still has the "fire power" left in its books should the country decide to increase its gold reserves. The country's total foreign exchange reserve is worth US\$2.4tn, which is nearly two to 41 times the value of the G7 members' total reserves at the end of 2009. China is already a major investor in US Treasuries, but with uncertainty surrounding the future direction of the US dollar and the Yuan, the search for alternative international asset choices for the PBoC's balance sheet may lead to a focus on gold. WGC estimates that if the PBoC decides to rebalance its books back, for example, to its recent peak gold holding ratio of 2.2% in Q4 2002, the incremental demand would amount to a further 400 tonnes at the current gold price. Even adding 10% from current levels of gold holdings would translate into incremental demand of 100 tonnes.

During the past decade, total Chinese gold mine output rose 84% and reached a new record in 2009 of 313.98 tonnes, according to China Gold Association (CGA)<sup>1</sup>. China is already the world's biggest producer and second largest consumer of gold, but has only 4% of total global gold reserves, according to the US Geological Survey (USGS) in 2009. Assuming the USGS' recent figures are correct, China may exhaust existing gold mines in six years from now. This

<sup>1</sup> Xinhua News Agency, 31 January 2010

could occur more rapidly if demand for gold in China experienced a sudden surge from current levels. However, China's gold resources are still relatively undiscovered and could create new investment opportunities. WGC also found that the total cost of production in China has risen by more than 30% in the last six years as a result of higher input costs (such as energy and labour) and lower ore grades. Therefore, WGC believes that Chinese gold supply growth may be more challenging and is likely to decline unless there is further investment in the Chinese gold industry.

Recycled gold supply is a wildcard in China. However, we believe that Chinese consumers are in the process of accumulating gold, which suggests that they are less willing to sell back their holdings in response to higher gold prices. Although it is now eight years into the gold bull market, the Chinese gold industry is simply not responding fast enough to bring in new supply. These effects combined create a "snowball" effect in China whereby the domestic gold industry may not be able to catch up with the annual leap in local consumption. Each year, China's demand for gold continues to grow, and the gap increases between new demand and new supply.

China has recently provided strong support for global gold demand during a period of weakness in other parts of the world in the gold industry. In a period of ongoing economic and financial uncertainty gold's role as a monetary asset, a global currency and an insurance policy providing protection against the unknown, all make gold an attractive asset class.

Gold has performed impressively for nearly a decade, both in China and internationally. Today, the combination of a healthy outlook for gold demand and its relatively inelastic supply in China may be seen as perfect conditions for gold and China is well placed to capitalise on this. In the longer term, WGC believes that China could have a long period of strong demand ahead and the consumption of gold in China has the potential to double in the next decade.

## Gold demand in China – a new world of opportunity

### Origins of gold demand

Gold is a symbol of wealth in Chinese culture. The children of affluent Chinese families are said to be born not with a silver spoon as in Britain, but with a golden chopstick in their mouths. In Chinese tradition, gold is given as a gift on birthdays, mother's day, births and at Chinese New Year. Gold is also bought as part of the wedding jewellery which forms a major part of total jewellery demand in China.

According to the author, Timothy Green<sup>2</sup>, the Chinese have long adored gold. In 23 AD, Emperor Wang Mang who founded the Xin Dynasty held the world's largest reserves of gold, approximately 155 tonnes in his treasury. Although today China is the world's second largest gold consumer and largest global producer, the country was a relative late-comer to the gold scene. Archaeological discoveries in China have found early evidence of copper and bronze in northern China around 2000 BC however the first signs of gold were discovered later, after 1500 BC and not before 1000 BC.

Gold first played a role as a money currency in the Southern state of Zhou. The commodity has always been measured in weight – *liang* in Mandarin and *tael* in Cantonese indicating one Chinese ounce. However, the actual weight of the ounce has changed. Today, one liang / tael weighs 37.43 grams/12 oz compared to 15.25 grams/0.49 oz during the Han Dynasty era in 206 BC. Peter J. Golas, in his study of gold mining in China, observed that gold bullion was extensively used in commercial transactions during the Han period<sup>3</sup>.

After the collapse of the Han Dynasty, the tradition of minting gold coins did not develop for many centuries during the reigns of the Tang, Ming, and Qing. The currency of the time was copper, although silk was used to settle transactions<sup>4</sup>. Gold was used among the nobility, for settlements among the different factions in China and for hoarding wealth.

During the period of the Six Dynasties (AD 222-589), demand for gold rose when Buddhism swept across China. The arrival of the religion from India and Tibet influenced Chinese Buddhist worshippers to make gold offerings, to build ornate stupas (pagodas) and to bequeath gold statues in the Buddha's image. According to John Kieschnick, the amount of gold used to make Buddhist images was so overwhelming that the Chinese government dictated the melting down of Buddhist images in order to supply the metal for construction and for use by the military<sup>5</sup>.

<sup>2</sup> Timothy Green, author of *The Ages of Gold*

<sup>3</sup> Peter J. Golas, *Science and Civilisation in China*, 1999

<sup>4</sup> Han Schu, *Food and Money in Ancient China*, 1950

<sup>5</sup> John Kieschnick, *The Impact of Buddhism on Chinese Material Culture*, 2003

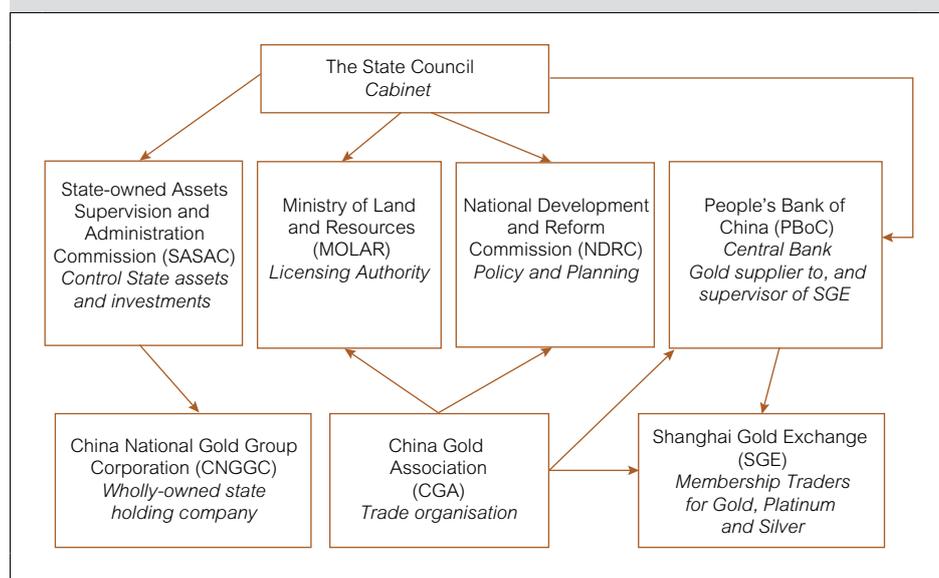
## Overview of the early gold market

Prior to 2002, the gold market in China was tightly regulated from production through to retail distribution. Gold prices and quotas were dictated by the People's Bank of China (PBoC) jointly with other central authorities. Permission was required from the PBoC to export gold and imports of gold jewellery were subject to a 60% import tariff (albeit a 40% cut from 100% in 1996). From 1996, China hastened the reform and liberalisation process. The freeing of the gold market included the use of the Shenzhen special economic zone to loosen jewellery retail price controls and to make the Yuan convertible (the Yuan is also referred to as Renminbi or CNY). It was not until October 2002 that the Shanghai Gold Exchange was established to replace the PBoC's gold purchase and allocation system. China also became a full member the World Trade Organisation (WTO) on December 2001 and has since worked to encourage the modernisation of mining laws in order to bring investment and mining expertise from the West into China.

China Gold Association (CGA) was established in November 2001 and plays an active role in China's gold industry. CGA acts as a bridge between the Chinese government and gold producers in protecting business interests and providing information, consultancy, co-ordination and intermediary services for them.

The Industrial and Commercial Bank of China (ICBC) and other commercial banks played a significant role in preparing for the launch of a fully functioning gold market. According to China Internet Information Center ([www.china.org.cn](http://www.china.org.cn)), ICBC had actively participated in setting up the operations of the Shanghai Gold Exchange and offered a range of services including clearing, warehousing, gold trading, leasing, financing for gold projects, gold purchasing, gold investment projects, gold import and export and individual gold trading.

Chart 2: Organisation structure of China's gold industry

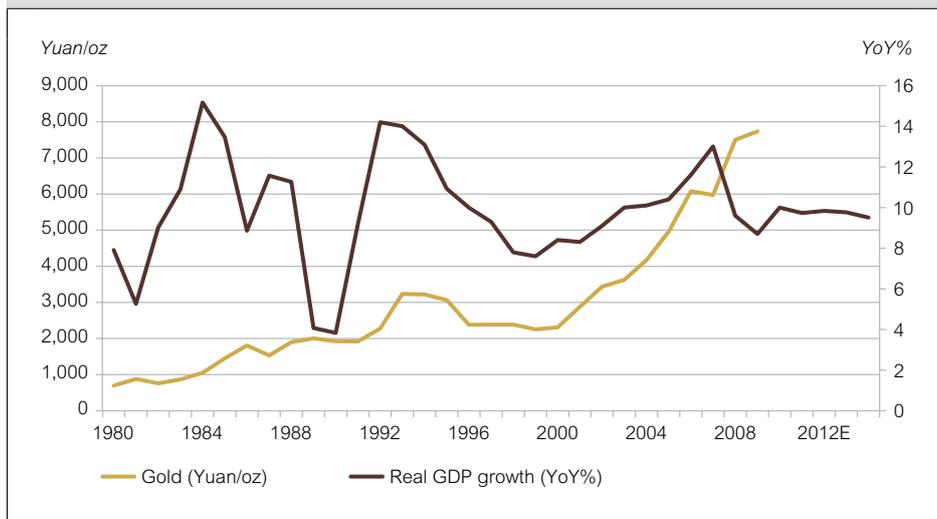


Source: WGC and China Financial Services

## Recent economic trends

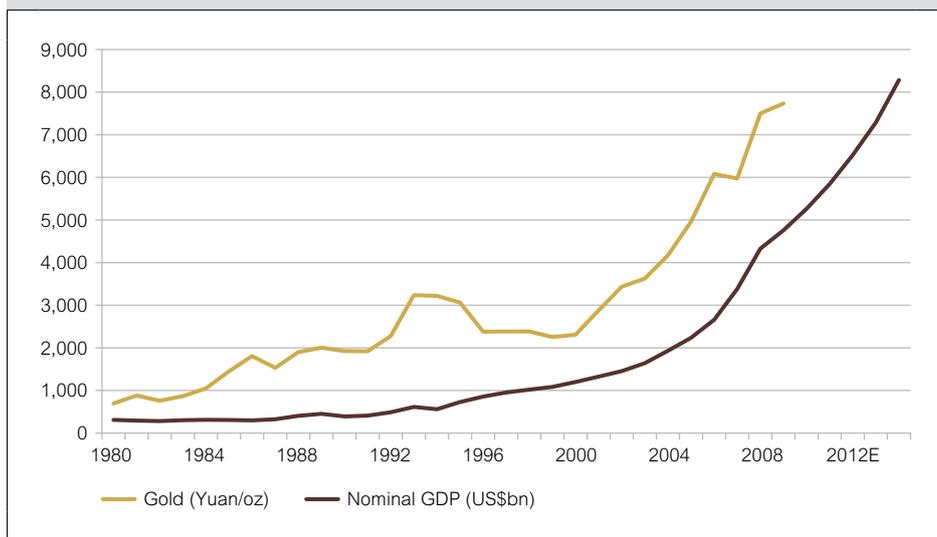
The Chinese economy has grown rapidly over the last decade. China's increasing personal income and consumption, aided by strong growth in its gross domestic product (GDP) (9.3% in 2007, 9.0% in 2008 and 8.7% in 2009) have nurtured the development of the luxury goods industry in the country.

Chart 3: Gold (Yuan/oz) and China real GDP growth (%)



Source: IMF (World Economic Outlook Update, January 2010), the BLOOMBERG PROFESSIONAL™ service

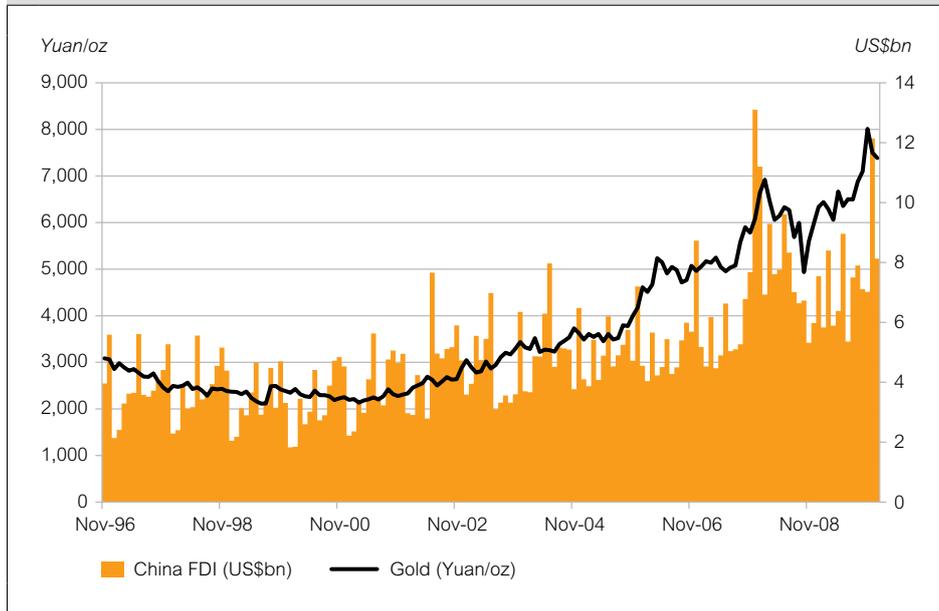
Chart 4: Gold (Yuan/oz) and China nominal GDP (US\$bn)



Source: IMF (World Economic Outlook, October 2009), the BLOOMBERG PROFESSIONAL™ service

Today the country's large balance of payments surplus, rapid economic growth, the high saving rate and the aggressive fiscal stimulus to offset global recession, make China a target destination of global foreign investment. China's foreign direct investment (FDI) in January 2010 rose 7.8% year-on-year to US\$8.13bn, marking the sixth consecutive month of year-on-year growth.

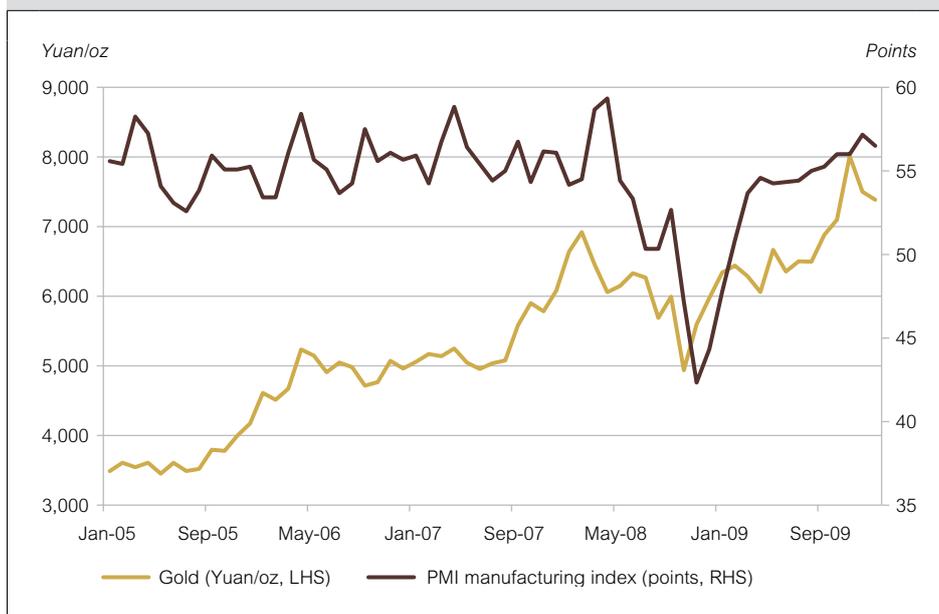
Chart 5: Gold (Yuan/oz) and China FDI (US\$bn)



Source: the BLOOMBERG PROFESSIONAL™ service

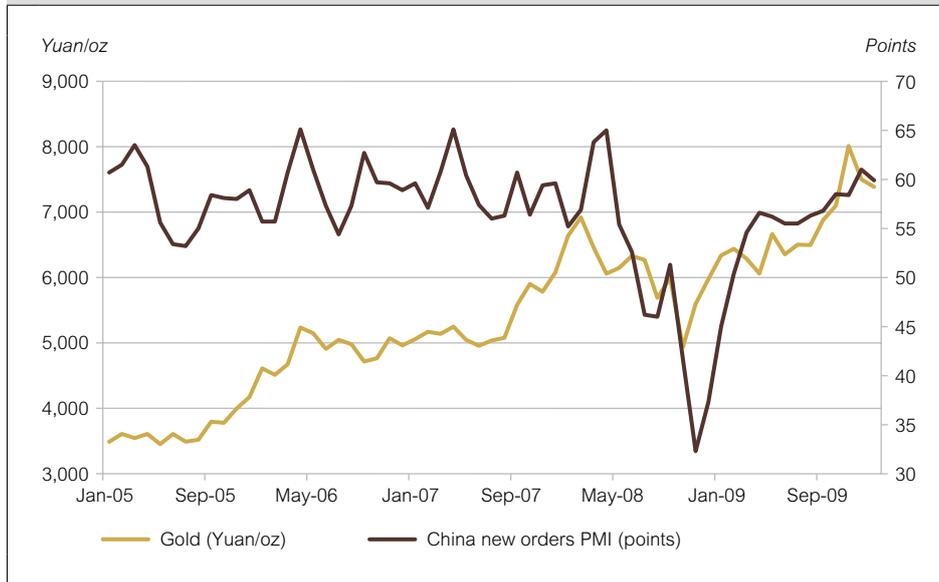
The graphs below show the rapid recovery of the HSBC China Manufacturing Purchasing Managers' Index (PMI) during and after the credit crisis. The index is a measure of manufacturing activity across China. The rapid recovery in the index and the continued strong economic growth rate being experienced by China has meant that the impact of the credit crisis has been relatively modest compared with the majority of the Western world, which faced deep recession in 2009 and is only now beginning to recover.

Chart 6: Gold (Yuan/oz) and Chinese PMI manufacturing index



Source: the BLOOMBERG PROFESSIONAL™ service

Chart 7: Gold (Yuan/oz) and China PMI new orders



Source: the BLOOMBERG PROFESSIONAL™ service

China now represents more than 20% of the major mining companies' sales of metals and 30-50% of the global raw materials demand.

Since the credit crisis began, China has been adjusting its economic model away from reliance on exports and Western consumers, and towards more domestically driven demand – a market with over 1.3bn consumers. In order to achieve this, China has been aggressively embarking on fiscal spending to secure the supply of raw materials and to facilitate the country's industrialisation and urbanisation programmes.

This includes a strategic purchasing policy (i.e. restocking), implemented through the State Reserves Bureau Agency, resulting in the purchase of commodities such as grains, copper, nickel and aluminium.

China's restocking strategy has also taken the form of acquisitions of natural resource producers around the globe.

Table 8: List of selected Chinese natural resource acquisitions announced

Year	Acquiror	Target/Comments	Country	Commodity	Value (US\$mn)
2009	Minmetals	100% stake in OZ Minerals, the world's second largest zinc miner	Australia	Zinc	1,700
2009	Shenzhen Zhongin Lingnan Nonfermet	50.1% stake in Perilya Ltd	Australia	Zinc and lead	29
2009	China Non-Ferrous Metals Industry	Terramin Australia's lead and zinc supplies in Algeria	Australia	Lead and zinc	32
2009	Jilin Ji En Nickel Industry Co.	Bought 51% of Ontario's Liberty Mines, a nickel producer	Canada	Nickel	24
2009	Hunan Valin Iron & Steel	16% stake in Fortescue Metals	Australia	Iron ore	770
2008	Chinalco	Bought 9% stake in Rio Tinto Group	U.K.	Diversified	14,000
2008	Wuhan Iron & Steel	50% stake in Centrex Metals Ltd, five iron ore projects	Australia	Iron ore	127
2008	Western Mining Co Ltd.	10% stake in FerrAus Ltd.	Australia	Iron ore	16
2008	Jinchuan Group Ltd.	100% stake in Tyler Resources	Canada	Copper	214
2008	Shougang Corporation	19.9% interest in Prosperity Resources Ltd.	Australia	Iron ore	4
2008	Haoning Group	9.55% stake in Jupiter Mines Ltd.	Australia	Iron ore	4
2008	Aluminium Corporation of China Ltd. (CHALCO)	40% stake in Saudi Aluminium project	Saudi Arabia	Aluminium	N/a
2008	Hunan Nonferrous Metals Corporation. Ltd	87.8% stake in Abra Mining Ltd.	Australia	Base metals	111
2008	Citic Resources Holdings Ltd.	20.39% stake in Macarthur Coal Ltd.	Australia	Coal	17
2008	Hunan Valin Steel Tube & Wire Co.	11.39% stake in Golden West Resources Ltd.	Australia	Iron ore	27
2008	Sinosteel Corporation	98.52% stake in Midwest	Australia	Iron ore	1,300
2008	Zhaojin Mining	Controlling stake in a gold mine in Hebei province	China	Gold	49
2008	China National Gold Group	Bought Canadian listed gold producer, Jinshan Gold	Canada	Gold	206
2007	Sinosteel Corporation	67% stake in Zimasco Holdings	Zimbabwe	Ferrochrome	N/a
2007	Zijin Mining	20% interest in a gold project from Lepanto Consolidated Mining Co.	Philippines	Gold	55
2007	Chinalco	Peru Copper Inc.	Peru	Copper	860
2007	Anshan Iron & Steel Group	Australian iron ore joint venture with Gindalbie Metals Ltd.	Australia	Iron ore	1,600
2006	China National Overseas Oil Corporation.	45% stake in the licence covering the OML 130 Nigerian oil fields	Nigeria	Oil	2,700

Source: the BLOOMBERG PROFESSIONAL™ service, Reuters, China Mining, Metal Bulletin, Wall Street Journal, Chinalco = Aluminum Corporation of China Limited

We believe this to be a long term strategy of China – to invest its wealth, to stimulate industrialisation and urbanisation, and to secure supplies and production of key raw materials.

In 2009, governments and central banks around the world implemented various liquidity strategies (such as interest rate cuts, fiscal stimulus, and quantitative easing) as a panacea to the global crisis. Table 9 shows the fiscal stimulus from selected countries, amounting to over US\$1.7tn. This was in addition to various bailouts, the Obama plan and the Troubled Asset Relief Program plan (TARP), which together totalled over US\$20-30tn on a global basis.

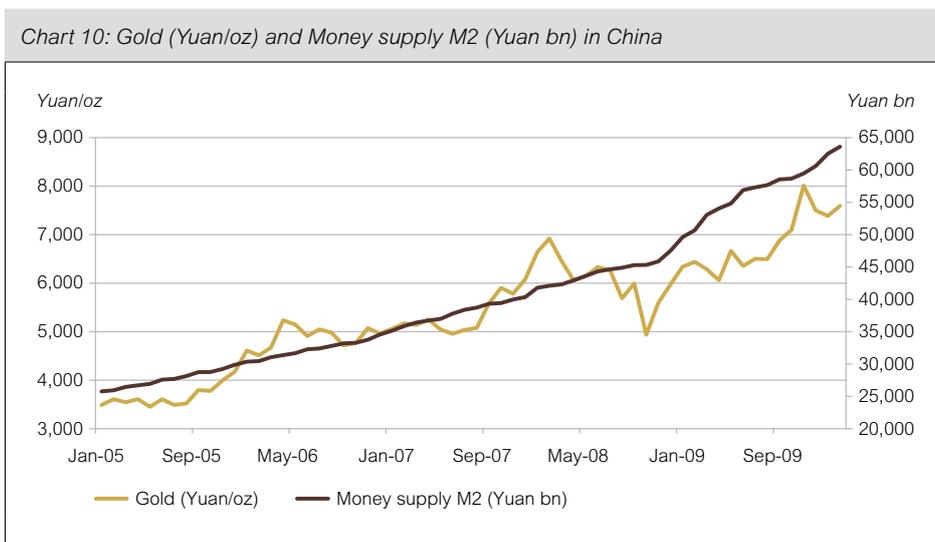
*Table 9: Fiscal stimulus announcements in 2008*

Selected country	US\$bn	Comments
USA	825	Over US\$200bn on infrastructure program.
China	586	Chinese stimulus package worth around 13% of GDP. Almost two-thirds of this package in infrastructure spending (railways, airports, power grid and for reconstruction).
Europe	193	Includes the following spending on infrastructure: €18bn in Germany, €8bn in Spain, €4bn in France, €17bn in Italy and SEK1bn in Sweden.
Japan	73	In April 2009, Reuters reported that the cumulative size of the Japanese stimulus package approached US\$154bn (or 3.1% of 2008 GDP).
Mexico	32	Stimulus package amount to 1% of GDP and includes a US\$14bn spending on infrastructure.
Russia	20	According to United Nation's Economic and Social Commissions for Asia and the Pacific, total fiscal stimulus announced in April 2009 amount to RUB 3tn (US\$90bn) or 7.2% of 2008 GDP.
Argentina	16	Almost two-thirds of this package allocated to road infrastructure projects and social improvements.
Singapore	14	Stimulus package totalling SGD20.5bn (US\$14bn) and includes a US\$2.9bn infrastructure spending.
Australia	7	Infrastructure program includes road funding, construction projects and a A\$1.2bn railway construction by the Australian Rail Track Corporation.
India	4	Stimulus package amount to 200bn Indian Rupees (US\$4bn) or 0.4% of 2008 GDP.

Source: the BLOOMBERG PROFESSIONAL™ service, Financial Times, News run, United Nation's Economic and Social Commissions for Asia and the Pacific, Reuters

China announced a fiscal stimulus measure of approximately US\$586bn (or 4tn Yuan) to improve its rail, road and air transport links. This measure also created new demand for raw materials during 2009.

At the end of February 2010, the growth of China's M2, the broad measurement of money supply, jumped 26% year-on-year on the back of strong fixed asset investments and related lending growth especially from big state-owned banks to add credit support to infrastructure projects.



Source: the BLOOMBERG PROFESSIONAL™ service, PBoC

We believe that a majority of the economies around the world still face strong headwinds as a result of the credit crunch. This includes huge deficits which signal currency uncertainty, sluggish economic growth, elevated unemployment in the near future, downward pressure on asset values and inflationary risks. Clearly, the global banking sector is not out of danger and the availability of credit remains constrained, with some banks still on life support. Some commercial banks remain unwilling to lend, forcing bond and rights issues by companies around the globe.

Public debt levels in the USA and Eurozone are recognised by most commentators as unsustainable. According to the IMF and the European Commission, the general government debt as a percentage of GDP in the Eurozone will rise from 69.3% in 2008 to 79.3% in 2009, 85.4% in 2010 and 90.7% in 2011.

The continued problems in the banking sector around the world suggest that the credit multiplier is not functioning. The IMF reported a total realised loss of approximately US\$1.2tn by banks and expects additional write downs or loss provisions of US\$1.6tn, suggesting that banks are unlikely to expand credit in the near-term. Whilst continued expansion in China has moderated the impact of the credit crunch globally, the prospect of significant overheating of the Chinese real estate and stock markets are also raising considerable concerns.

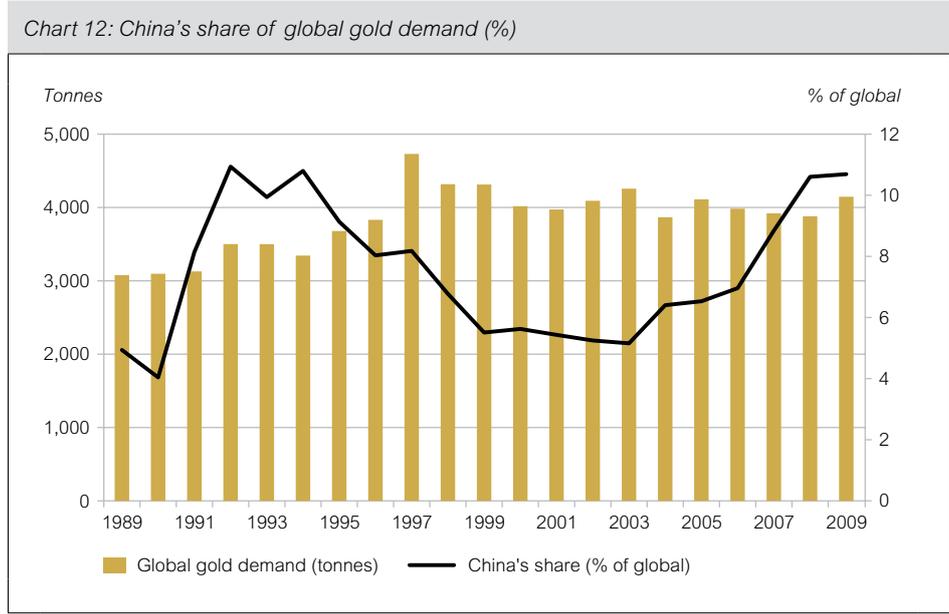
The table below shows IMF estimates of the global bank loans and securities holdings and total write-downs between 2007 and 2010<sup>6</sup>. According to the IMF, Asia banks have less exposure in loans and securities (14% of global or US\$7.9tn) and future write-down risks (7% of global estimated total write downs, US\$186bn).

Domicile	Est. holdings of loans and securities US\$bn	Breakdown %	Est. total write-downs (US\$bn)	Breakdown %
USA	12,561	23%	1,025	36%
United Kingdom	8,369	15%	604	22%
Euro Area Banks	26,871	48%	1,015	36%
Asia Banks	7,879	14%	186	7%
<b>Total</b>	<b>55,680</b>	<b>100%</b>	<b>2,809</b>	<b>100%</b>

Source: IMF (Global Financial Stability Review, October 2009)

<sup>6</sup> The International Monetary Fund, Global Financial Stability Review, October 2009.

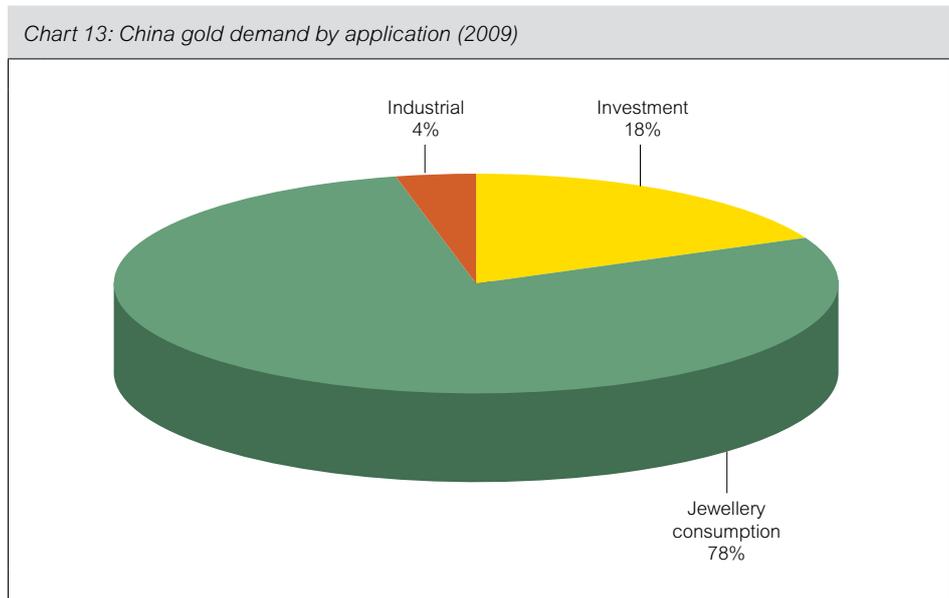
## Demand continues to strengthen in China



*Note: China gold consumption figure excludes PBoC purchasing.  
Source: GFMS, WGC estimates*

Today, China's gold market is enjoying the benefits of liberalisation and deregulation. Gold consumption in China has been on the rise due to the country's rapid economic growth and the continued improvements in living standards of its population.

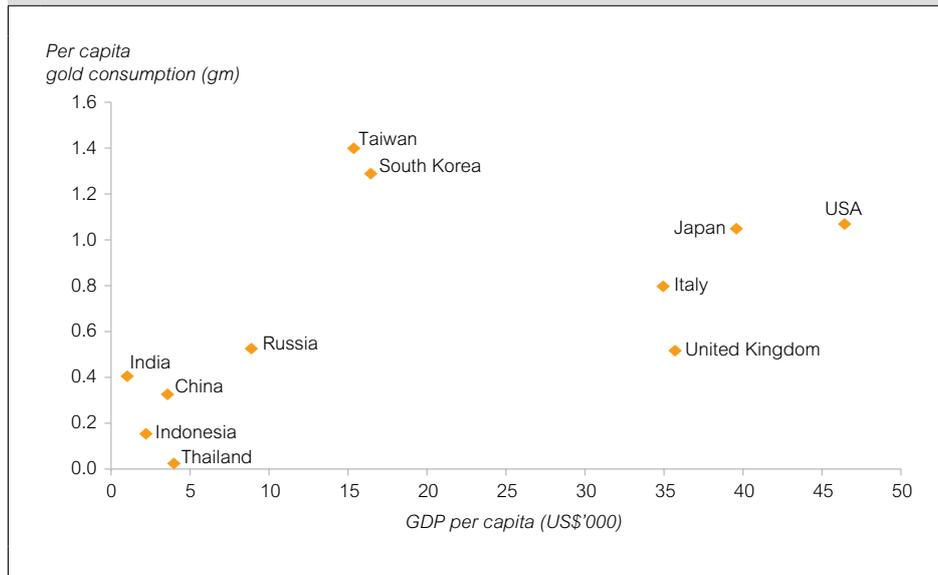
Chinese demand for gold has grown at an average rate of 13% per annum over the past five years. This makes it the world's second-largest gold consumer after India, as the booming economy spurs jewellery purchases which constitute the majority of total Chinese gold demand.



*Source: GFMS, WGC estimates*

The graph shows the intensity of gold consumption in selected countries. This is measured by looking at each country's gold demand per capita versus its gross domestic product (GDP) per capita in 2009. We find that China – together with some developing countries such as Russia, India and Indonesia – has a lower gold consumption intensity compared to Western economies like the USA and Italy.

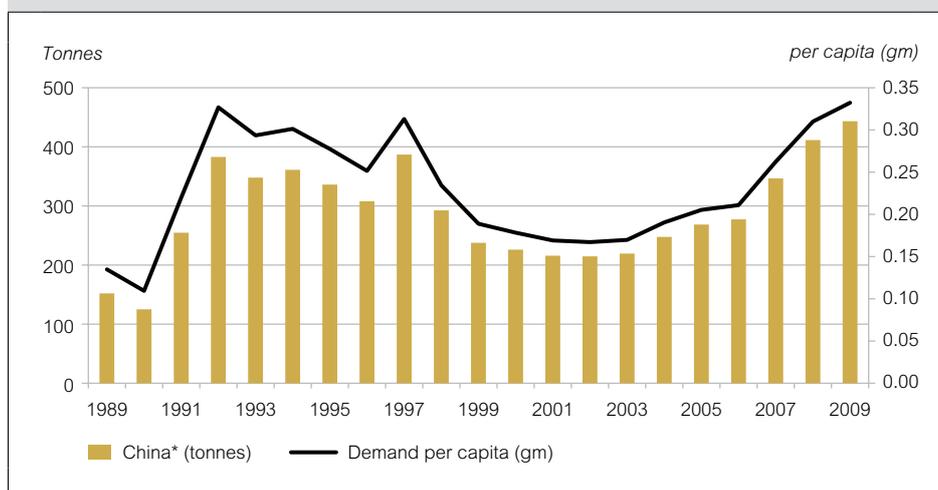
Chart 14: Global gold consumption intensity



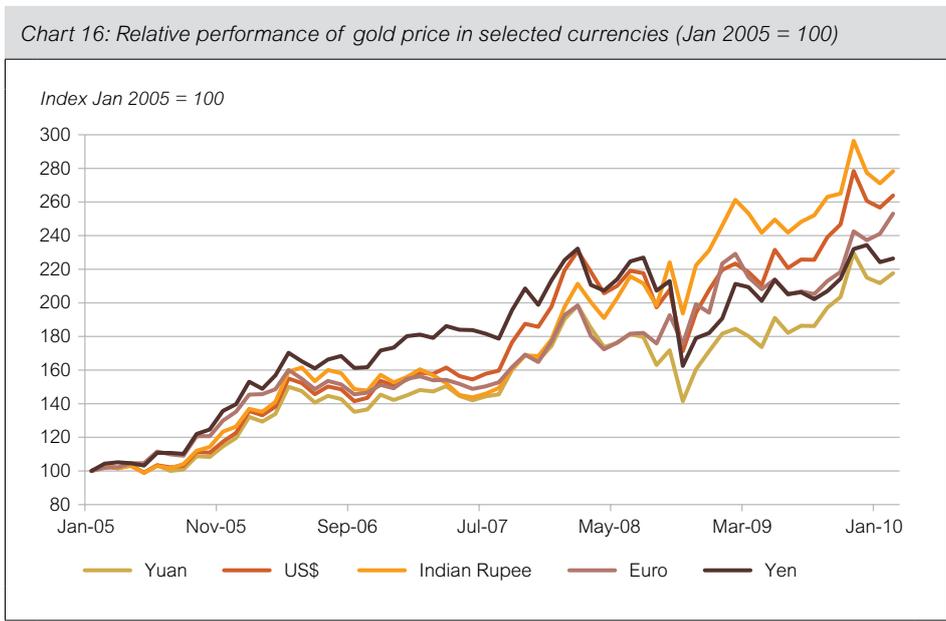
Note: Demand excludes central bank purchases.  
Source: GFMS, IMF, WGC estimates

The level of China's consumption per capita has been increasing as a result of the deregulation of the gold market. Higher incomes per head and the underlying strength of gold culture in China have been major supporting factors. We note that China's consumption per capita rose from 0.17gm in 2002 to 0.33gm in 2009; while over the same period average annual gold prices in US dollars have risen by 216% to US\$1,099 an ounce and the population increased by around 50mn.

Chart 15: Chinese gold demand (t) and demand per capita (gm)

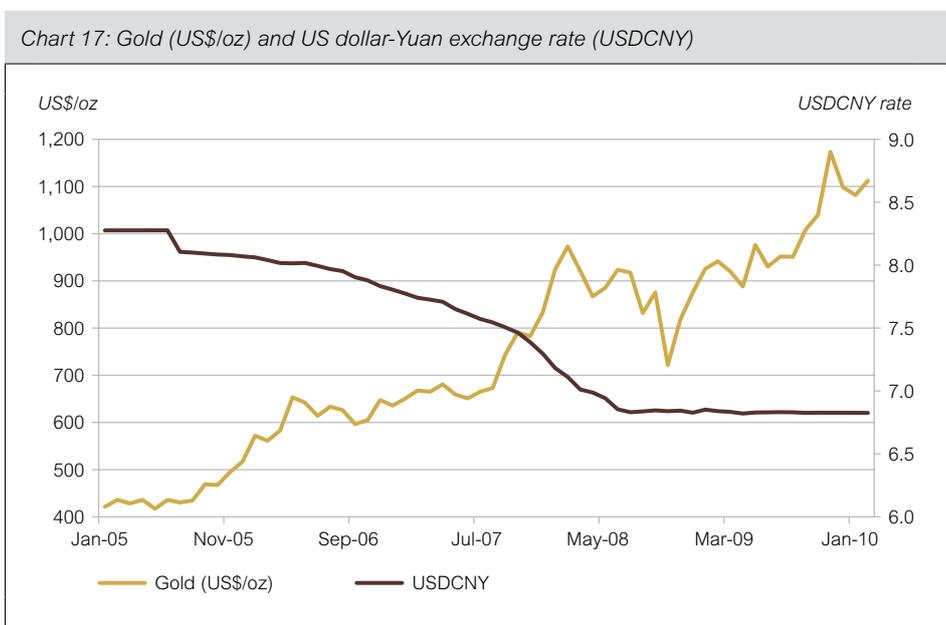


Note: \*Figures exclude the PBoC gold purchasing.  
Source: GFMS, WGC estimates



Source: the BLOOMBERG PROFESSIONAL™ service, WGC

The graph above displays relative gold price movements in selected currencies (Yuan, Euro, Indian Rupee and Japanese Yen) since January 2005. It illustrates the relative strength of the Chinese Yuan, the Euro and the Yen when compared to the US dollar and the Indian Rupee.

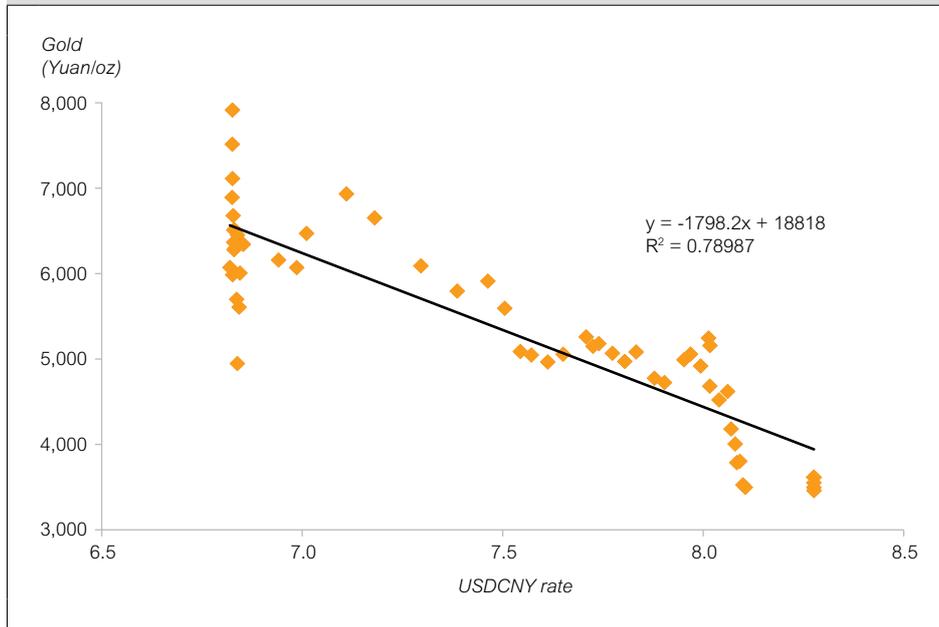


Note: Chinese Yuan also referred to as Renminbi or CNY in this report.

Source: the BLOOMBERG PROFESSIONAL™ service, WGC

US dollar weakness and Yuan strength over the last two years have helped to support domestic gold demand in China. The uncertainty over the US dollar could remain in the near term until we see confidence return in the USA economy and an increase in rates by the US Federal Reserves.

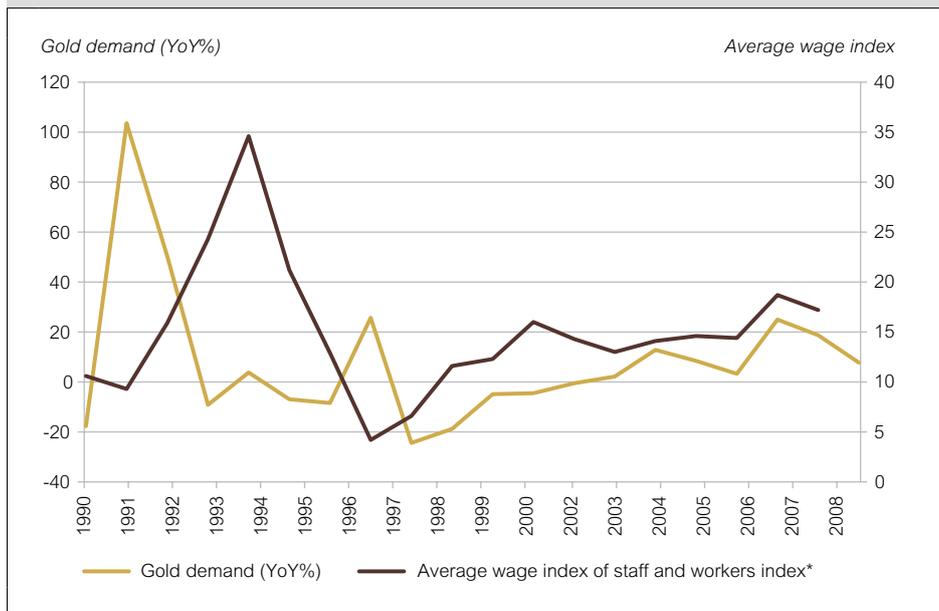
Chart 18: Relationship between gold (Yuan/oz) and US\$/Yuan exchange rate



Source: the BLOOMBERG PROFESSIONAL™ service, WGC estimates

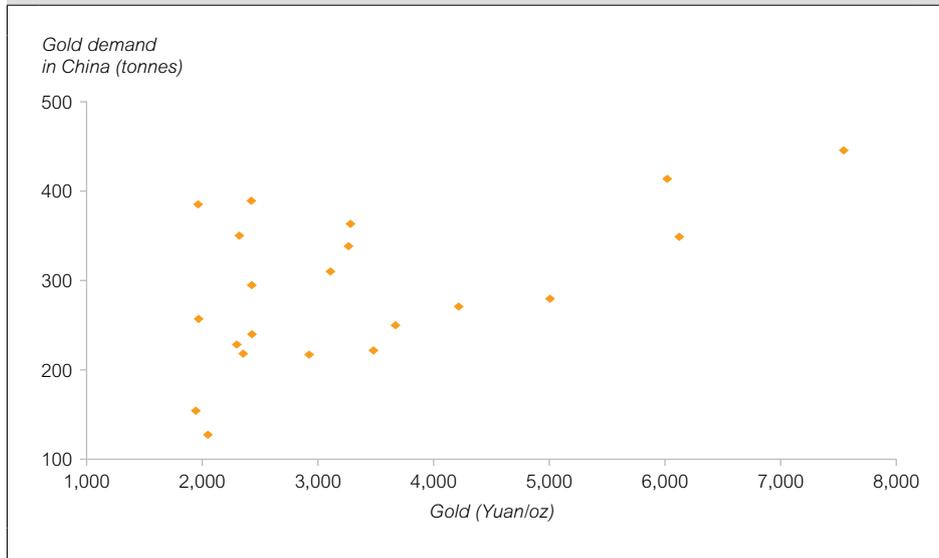
We believe that rising average incomes, a surplus of investable income derived from a high savings rate and improving standards of living in China are factors which will help fuel growth in gold demand, especially the growth of discretionary spending in the jewellery sector.

Chart 19: Gold demand and average wage index of staff and workers (YoY%) in China



Note: \* Average Wage Index of staff and workers data available until 2008 only  
China's gold demand excludes the PBoC gold purchasing.  
Source: the BLOOMBERG PROFESSIONAL™ service, GFMS, WGC estimates

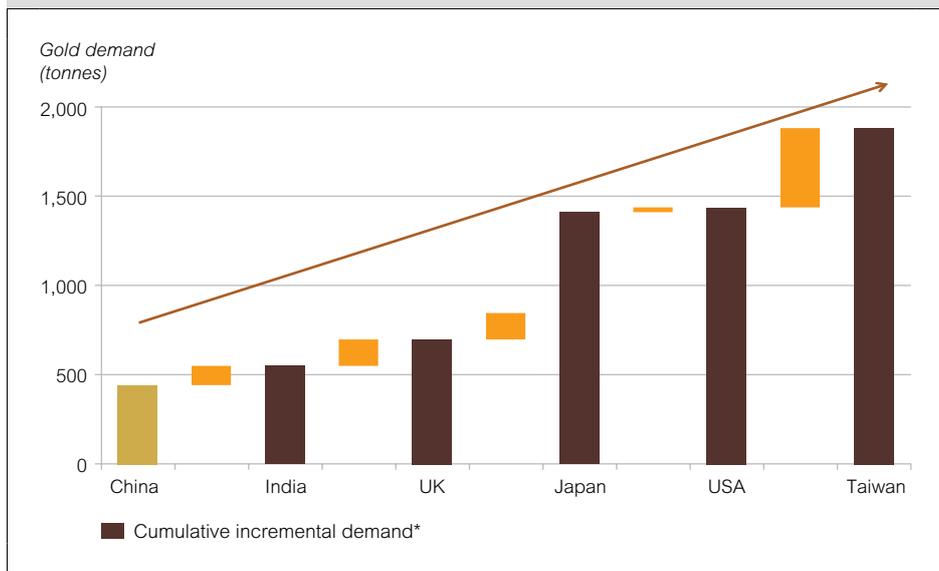
Chart 20: Relationship between total gold demand in China and gold (Yuan/oz)



Note: Figures exclude the PBoC gold purchasing.  
Estimates are based on the selected countries' gold demand per capita.  
Source: GFMS, WGC estimates

The graph below illustrates the WGC's projection of incremental gold demand in China at other selected countries' per capita consumption rates. We estimate that a substantial increase in gold demand would take place if demand in China was raised to Japanese, USA or Taiwanese levels. In this case, total incremental demand ranges from another 1,000 tonnes at USA and Japanese per capita consumption levels to still more, if Chinese per capita gold consumption were to rise to Taiwanese levels.

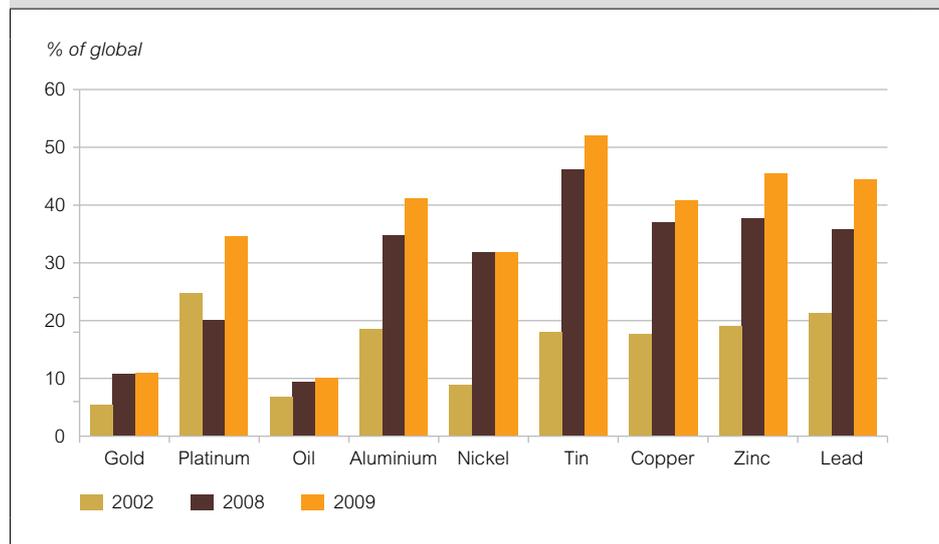
Chart 21: Incremental Chinese gold demand at selected countries' per capita gold consumption



Note: \*Estimates based on IMF's 2010E China population figure.  
China's gold demand excludes the PBoC gold purchasing.  
Source: GFMS, IMF, WGC estimates

## China's market share of demand for gold and selected commodities

Chart 22: China's market share of demand for gold and selected commodities (% of global)



Source: the BLOOMBERG PROFESSIONAL™ service, GFMS, World Bureau Metal Statistics, Johnson Matthey, EIA, BP, China Coal, WGC estimates

China's share of global gold demand doubled from 5% in 2002 to 11% in 2009. This should not be a surprise given that the Chinese gold market was liberalised less than a decade ago. The growth of China's share of global demand in other metals has been even more marked. China's share of aluminium, nickel, copper, tin, zinc and lead global consumption has grown to over 30% each. This was mainly due to the country's strategic purchasing (i.e. restocking) through the State Reserves Bureau Agency in order to facilitate the country's industrialisation and urbanisation programmes.

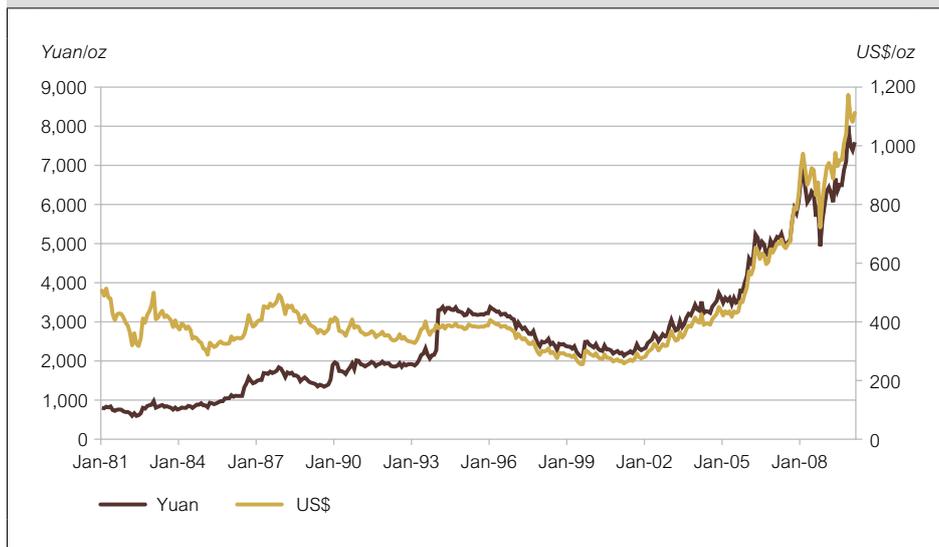
The exception is oil. China's share of total oil consumption rose from 7% in 2002 to 10% in 2009. According to BP and the United States' Energy Information Administration (EIA), the reason for the slow growth in oil consumption is that China has limited reserves of oil and natural gas but substantial reserves of coal<sup>7</sup>. China has an abundance of coal resources and coal remains the leading source of energy for China's industrial sector. China's State Energy Administration said at the Ningxia Energy Development Strategy Forum in June 2009 that the country has made progress on the construction of large coal mines, which can satisfy the power requirements of the rapidly growing crude steel production industry in China. Wu Yin, the Administration's Chief Engineer, stated that the country now has 35 large coalmines each with an annual output of over 10mn tonnes and 14,000 small coal mines with an average production capacity of 180,000 tonnes per annum.

<sup>7</sup> BP Statistical Review of World Energy, June 2009 Report

## Gold price and seasonality

Gold is currently trading around US\$1,100/oz, a 57% rise from its low of around US\$700/oz in November 2008. The metal has continued to shine for the past eight years – providing an average return of 18% per annum whilst remaining relatively insulated from the forces that have dragged down other asset classes during the credit crisis and recession.

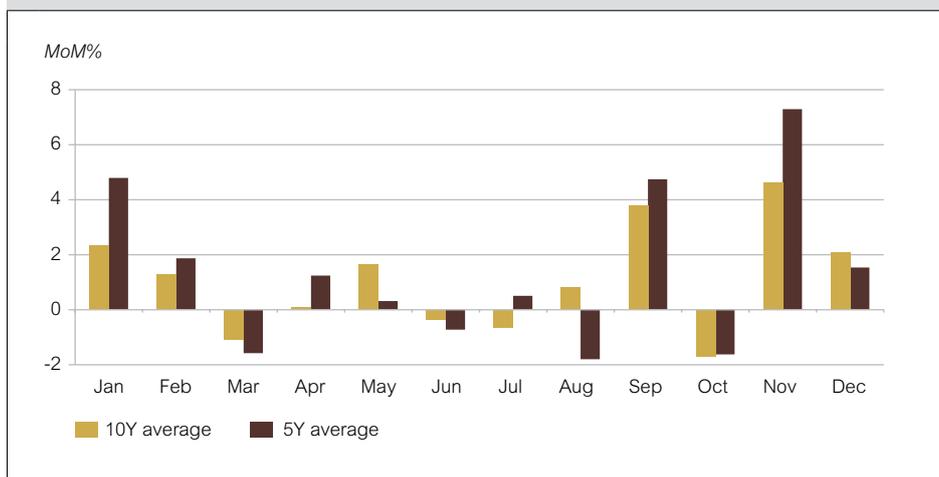
Chart 23: Performance of gold prices in US\$ and Yuan/oz



Source: the BLOOMBERG PROFESSIONAL™ service

Seasonally, January, September and November have been the strongest months for gold in the last five to ten years. In China, consumers typically restock during the winter months for Chinese New Year, Christmas and New Year, which has a positive impact on Yuan gold prices. There is no perfect rule of thumb to seasonality but gold bulls will be encouraged to know the China gold market is entering the traditional second restocking wave of the year in April and May.

Chart 24: The average monthly gold performance in Yuan/oz ending December 2009 (MoM%)



Source: the BLOOMBERG PROFESSIONAL™ service, WGC estimates

## Jewellery – potential demand growth given current low per capita level

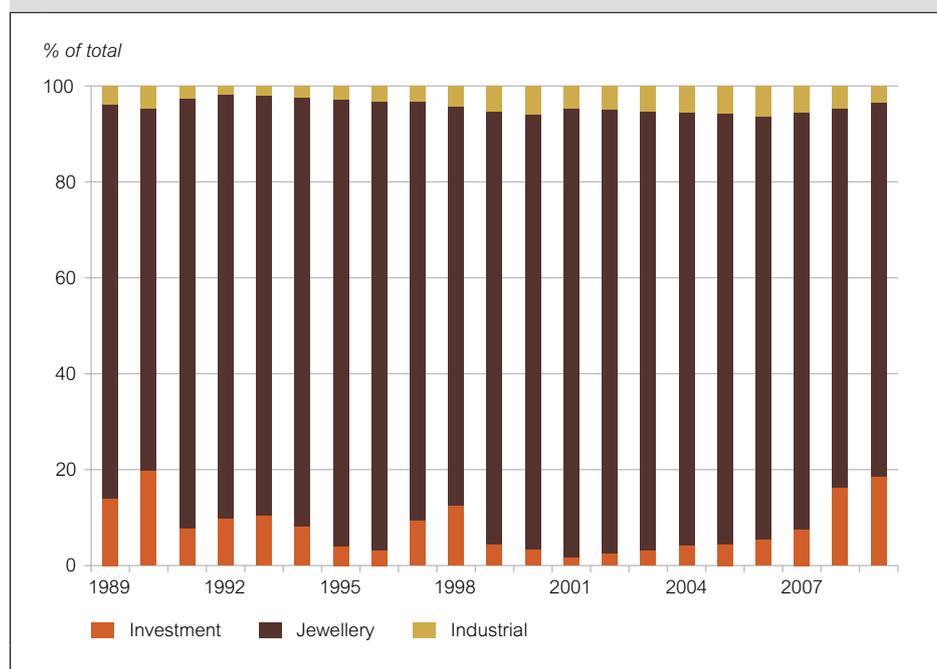
China's gold jewellery market is unique; local consumers are well aware of gold's benefit as a store of value.

Gold jewellery (especially 24 carat gold jewellery which accounts for at least 80% of total gold jewellery demand in China) has always been regarded as an investment by the Chinese. The majority of the Chinese jewellery market is 24 carat gold, sold as "chuk kam" (which means "pure gold" in Mandarin, technically 100% purity – or as near as can be produced).

However, in recent years, the WGC has seen a shift of demand into 18 carat jewellery (75% gold content, alloyed with copper and other metals). Innovative products such as K-gold, 18 carat gold with Italian inspired design, launched in 2003 by the WGC and its partners, has been a success in attracting younger, urban cosmopolitan consumers to gold jewellery.

WGC also introduced the Gold Elite Product with "per-piece-pricing strategy" through the launch of an Only Gold Elite Product Campaign in 2007, establishing an elite product category among 24 carat pure gold market.

Chart 25: China gold demand by sector (%)



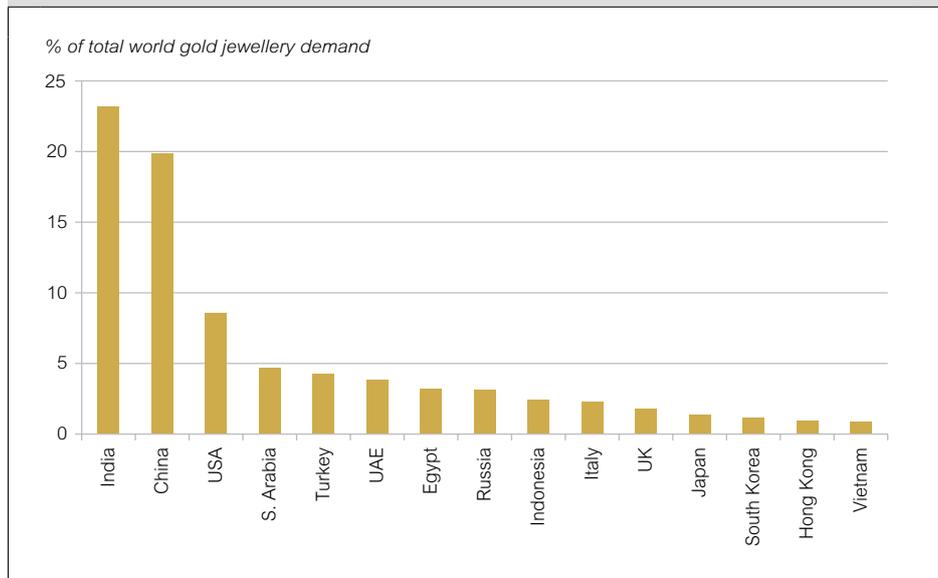
Note: Jewellery data in this chart refers to consumption not fabrication.

Source: GFSM, WGC estimates

Jewellery is by far the most dominant area of China's gold demand, absorbing almost 80% of tonnage off-take in China for the past ten years.

During the same period, China's jewellery off-take has averaged 250 tonnes of gold per annum. In 2009, the country ranked second in the global gold jewellery market, behind India.

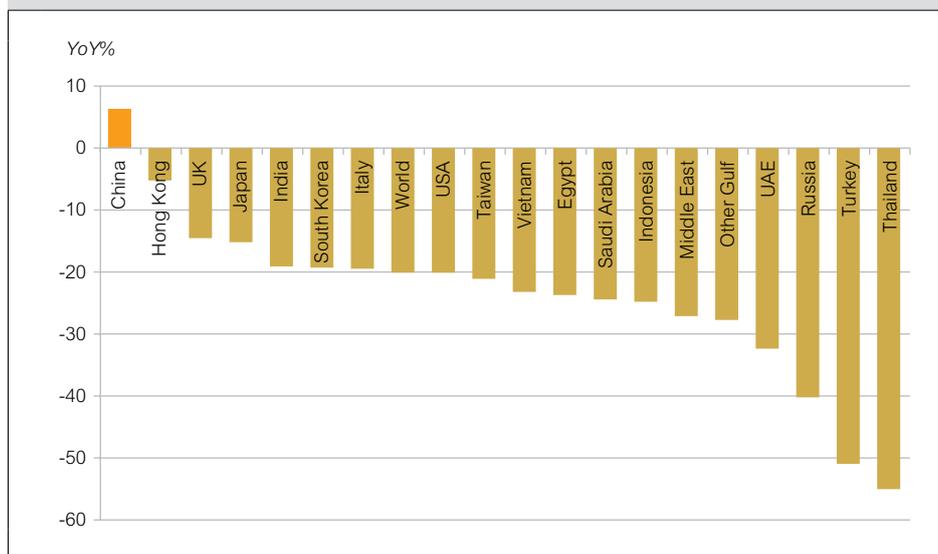
Chart 26: Top gold jewellery consumers by country in 2009



Note: Jewellery data in this chart refers to consumption not fabrication.  
Source: GFMS, WGC estimates

In 2009, the country proved to be the most resilient of the global gold jewellery markets, as shown in the chart below. China posted a noticeable growth in contrast to declining gold jewellery demand elsewhere. Gold jewellery demand in China was up 6% year-on-year to reach 347.1 tonnes in 2009, representing around 20% of world gold jewellery demand.

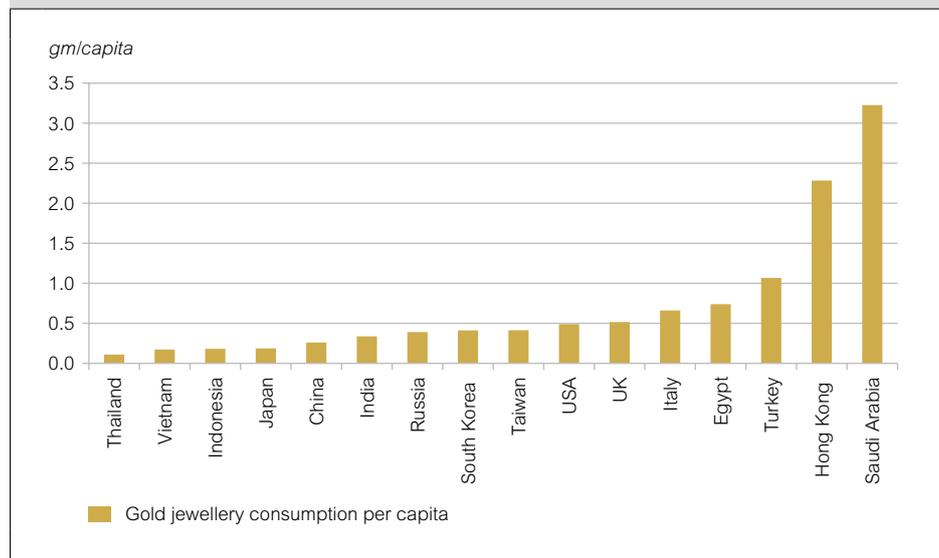
Chart 27: Movement in gold jewellery consumption by country (YoY%) in 2009



Note: Jewellery data in this chart refers to consumption not fabrication.  
Source: GFMS, WGC estimates

The figures show gold jewellery consumption per capita for selected countries around the world. Large variations can be observed in gold jewellery demand across the selected countries studied.

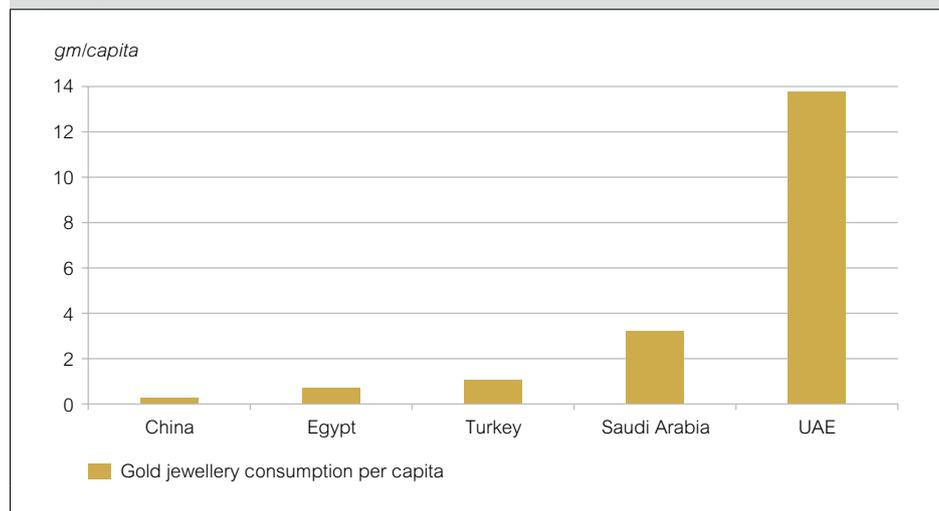
Chart 28: Gold jewellery consumption per capita for selected countries in 2009 (gm/capita)



Note: Jewellery data in this chart refers to consumption not fabrication.

Source: GFMS, IMF, WGC estimates

Chart 29: Gold jewellery consumption per capita for selected countries in the Middle East and China (gm/capita, 2009)



Note: Jewellery data in this chart refers to consumption not fabrication.

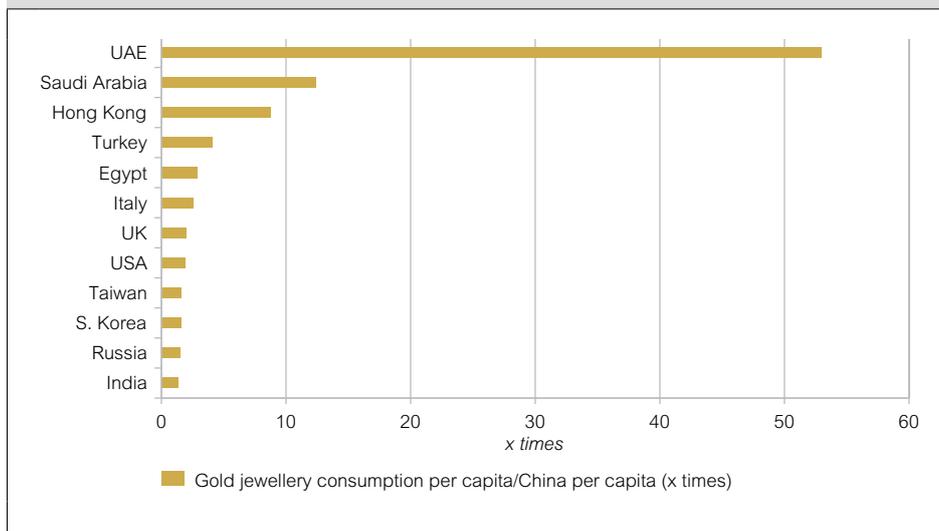
Source: GFMS, IMF, WGC estimates

The three largest per capita gold consumers in the world, United Arab Emirates (UAE), Saudi Arabia and Hong Kong, are also jewellery producers with strong gold cultures.

We believe there is significant potential for gold jewellery demand in China to increase. We estimate that current Chinese jewellery consumption is around

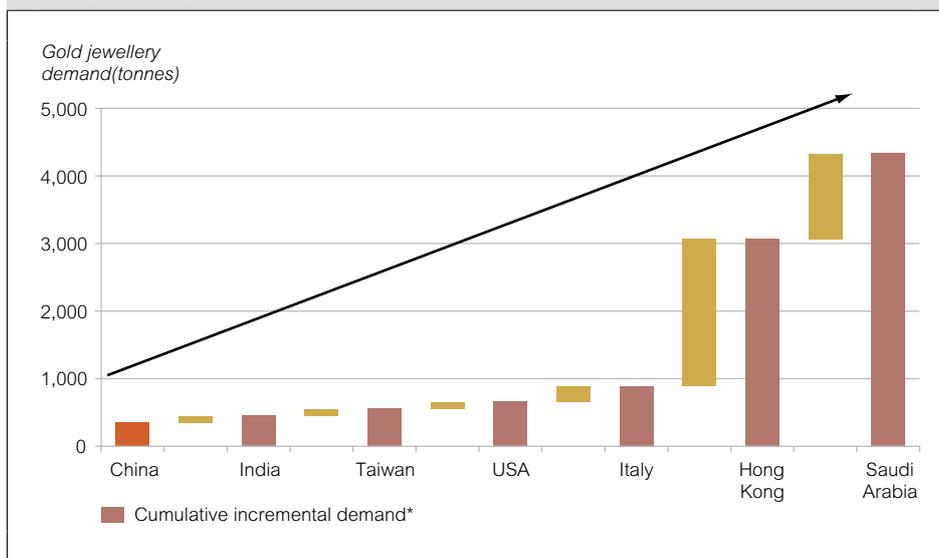
0.26 gm per capita. This level may seem low for a culture with strong affinity to gold, when compared to other countries such as UAE, Saudi Arabia, Hong Kong, India and Taiwan. These countries and regions have similar magnetism to gold however the jewellery per capita consumption in 2009 was estimated to be 1.3 to 53 times that of China's. In tonnage terms, WGC estimates that if gold was consumed in China at the same rate per capita as in India, Hong Kong or Saudi Arabia, annual Chinese demand could increase by at least 100 tonnes to as much as 4,000 tonnes in the jewellery sector alone.

Chart 30: Gold jewellery consumption per capita for selected countries/China per capita (x times)



Note: Jewellery data in this chart refers to consumption not fabrication.  
Source: GFMS, IMF, WGC estimates

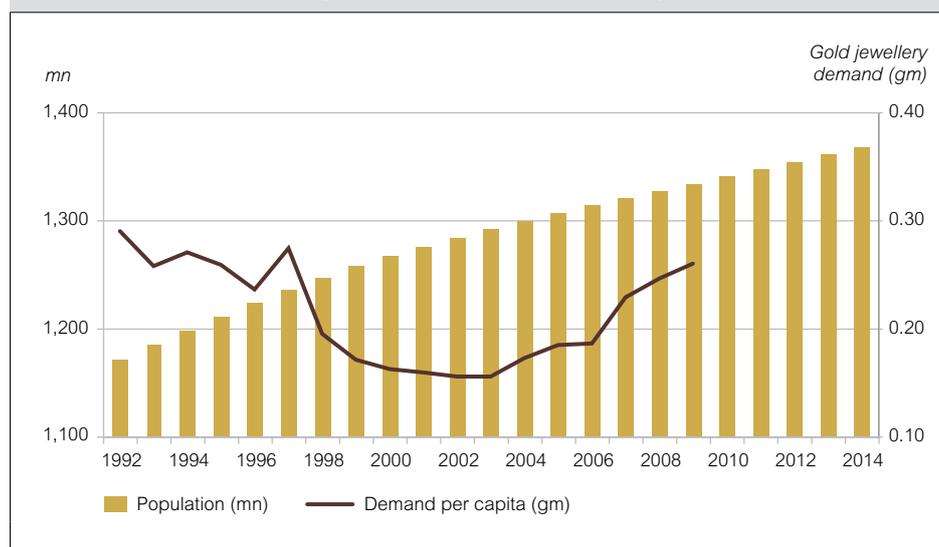
Chart 31: Incremental Chinese gold jewellery demand at selected countries' per capita gold jewellery consumption



Note: \*Estimates based on IMF's 2010E China population figure. Jewellery data in this chart refers to consumption not fabrication.  
Source: GFMS, IMF, WGC estimates

There are some caveats to this assertion. It is not always possible to arrive at an accurate forecast using the per capita assumption due to the following factors: the strength of gold culture, income level per head of individual country and government intervention (i.e., the prohibition of private ownership).

Chart 32: Population (mn) and gold jewellery demand per capita (gm) in China



Note: Estimates based on IMF's China population figure, 2010-2014 population figures are IMF's projection. Jewellery data in this chart refers to consumption not fabrication.

Source: GFMS, IMF, WGC estimates

We believe that as Chinese incomes and population rise, so will the demand for gold. The cultural affinity towards gold is very strong in China, as in India. The main difference is that China has a lot of catching up to do and there is no sign of a slowdown in China's appetite for gold.

### Investment – an opportunity to play catch up?

China's gold investment entered a new phase following the deregulation of its gold market in 2001 and the opening of the Shanghai Gold Exchange (SGE) in 2002. Today China is the fastest growing major economy in the world, having maintained an average 9.8% real GDP growth throughout the last decade. The country has gradually opened up to foreign markets and investment but has nevertheless lagged behind the Western world where there are fewer regulatory and other barriers to international capital movements.

During China's Eleventh Five-Year Plan period (2006-2010), gold investment among private individuals in China has been developing rapidly as Chinese investors catch up with their foreign counterparts in terms of gold ownership.

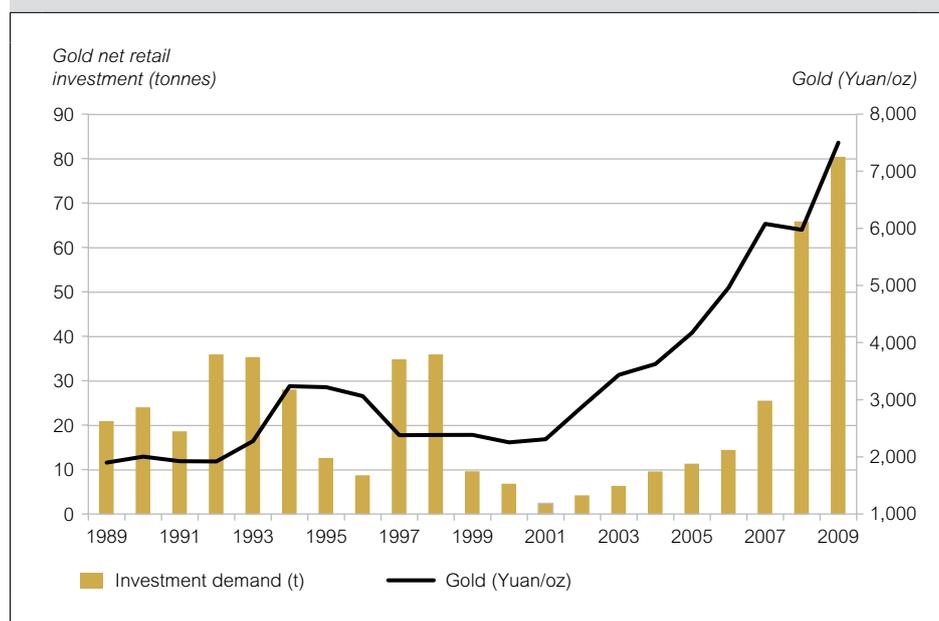
We believe there is a growing interest among the Chinese in commodity investment, stimulated by a high savings ratio, but also because there are not enough domestic investment opportunities available to Chinese investors. Chinese consumers are high savers, having accumulated wealth since 1978 when the Chinese government shifted the burden of retirement income to

individual households. The Asian currency crisis added additional impetus to this savings culture.

One should not forget that less than nine years ago there were regulatory restrictions on gold trading, ownership and investment in China. In 2001, the Chinese central bank announced the abolition of China's long-term government monopoly of gold. Over the last century, the deregulatory tide in economic governance has helped to reduce the number of barriers to gold ownership around the world. In some cases the results have been spectacular. For example during the 1990s in India, when the liberalisation process was in full swing, Indian gold demand more than doubled from around 300-350 tonnes in 1992-93, to over 700 tonnes at the end of 2008.

Chinese net retail investment in gold has increased from 65.9 tonnes in 2008 to 80.5 tonnes in 2009 (up 22% year-on-year). We expect this level to rise further despite recent gold price performance. In the WGC's Gold Demand Trends Report for the fourth quarter and full year 2009<sup>8</sup>, we highlighted that Chinese consumers continue to buy gold in a rising gold price environment.

Chart 33: Gold (Yuan/oz) and gold net retail investment demand in China (t)

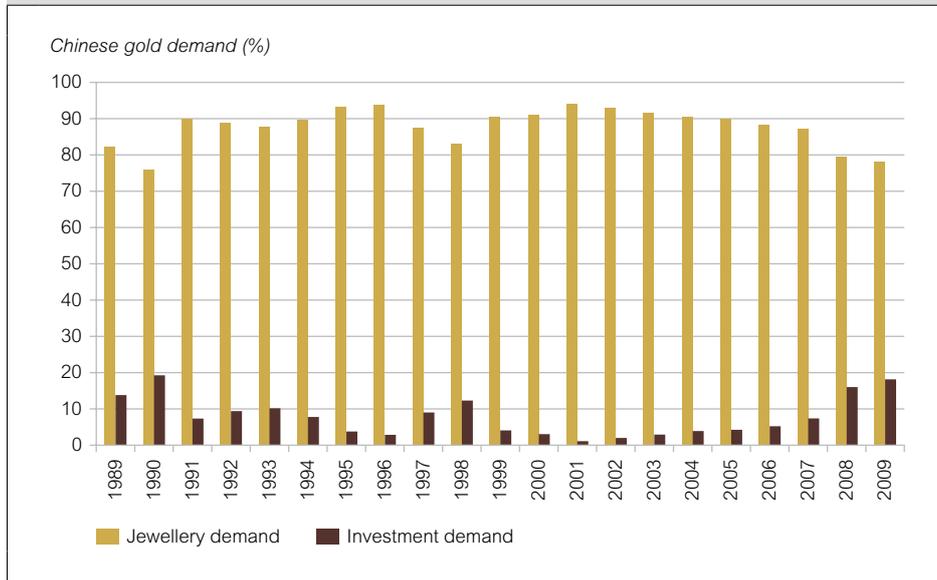


Source: GFMS, WGC estimates

Investment in China in the form of gold coins and bar hoarding has shown a strong growth momentum in recent years, although this market still accounted for less than a third of total domestic gold demand in 2009.

<sup>8</sup> WGC, Gold Demand Trends, Q409 and Full year 2009, February 2010

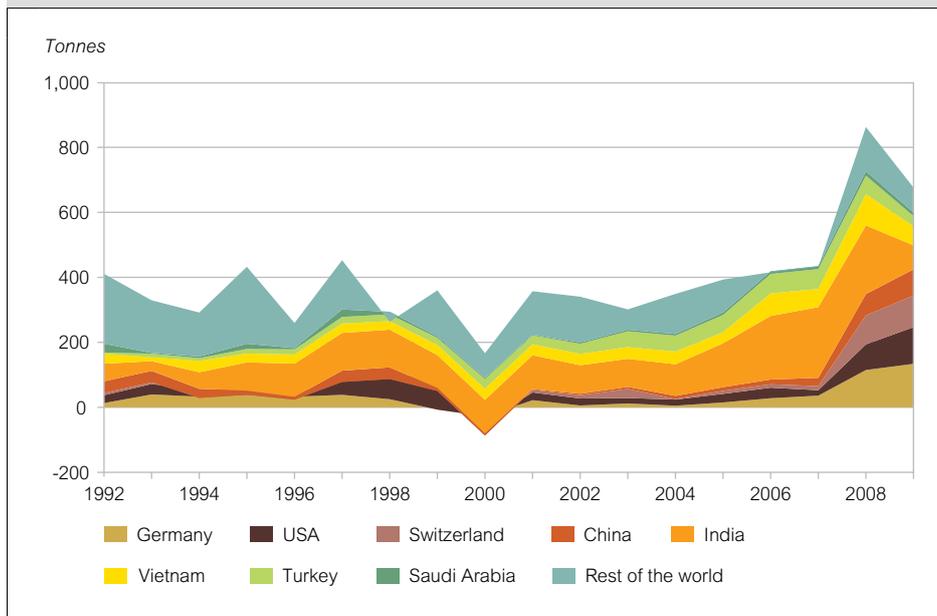
Chart 34: Jewellery and investment demand (% of total gold demand in China)



Source: GFMS, WGC estimates

We believe that the amount of Chinese gold coins and bar hoarding holdings in private hands is much less than in countries such as India and Vietnam. Chinese consumers are currently in the process of accumulating them, which may suggest that they are less willing to sell back their holdings as the gold price rises, compared to consumers in other parts of the world.

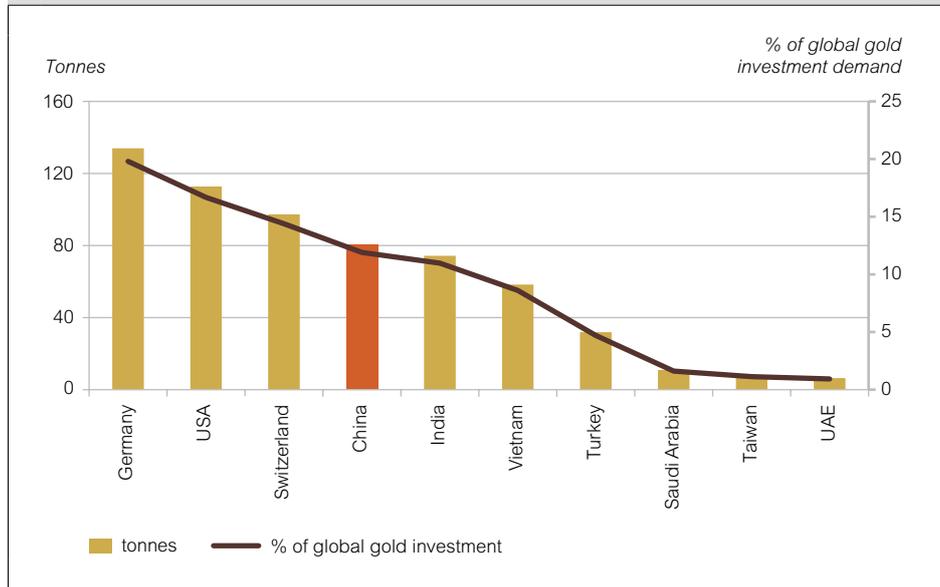
Chart 35: Net retail investment in gold by country (t)



Source: GFMS, WGC estimates

At the end of 2009, China ranked fourth in annual world gold coins and bar hoarding purchasing behind Germany, USA and Switzerland.

Chart 36: Top gold investment by country in 2009



Source: GFMS, WGC estimates

In China, there are two well known minted coins: The Chinese Panda Gold Coin, first minted in 1982 and the Chinese Mint 2008 Olympic Coin. These coins are of fine quality, well presented and designed mainly for collectors. The majority of available Chinese gold coins are listed on the WGC website. Both China Gold Coin Corporation and the Chinese Mint, operating under the direct leadership of PBoC, deal in gold and silver commemorative coins. The PBoC has sold over 2mn oz of gold coins to the domestic and international market since its establishment in 1987. Shenzhen Guobao Mint was set up to specialise in the production of gold and silver coins.

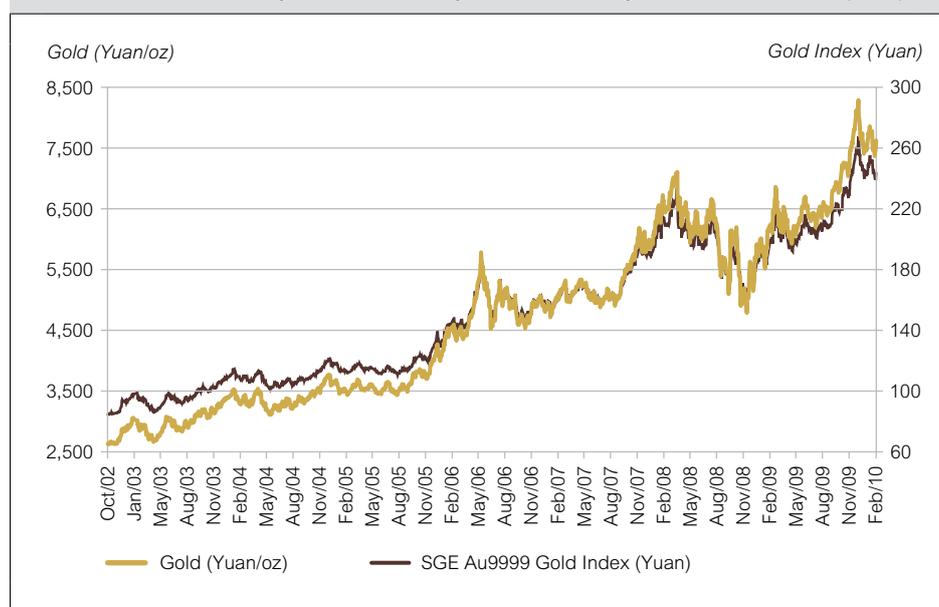


Chinese minted coins  
Source: WGC

In 2006 the first gold investment bar was introduced into the market by Zhongjin, Gold Corporation and WGC with two-way trading and a low premium over the spot price at SGE, prompting the start of the gold investment bar markets in China. Since then, in the absence of a Chinese listed gold exchange traded fund (ETF), other domestic commercial banks have ventured into the gold trading business, selling gold to individuals by offering gold accounts and physical gold products.

In January 2008, China introduced its first gold futures contract, launched on the Shanghai Futures Exchange in response to rising domestic demand for gold and growing demand from producers seeking to hedge gold price risk<sup>9</sup>. SGE introduced the special gold investment bar product – “SGE Traded Gold” which could be traded through the gold accounts at specific commercial banks and traded on the SGE’s trading platform. According to the CGA, volumes of gold traded on the SGE amounted to 4,705.9 tonnes (1.03tn Yuan) by the end of 2009, up 420% from 2005 when 905 tonnes was traded<sup>10</sup>. Nearly 6.81mn gold futures worth approximately 1.53tn Yuan were traded on the SGE in 2009. Many Chinese gold producers now conduct spot transactions on the exchange instead of selling all of their gold to PBoC, the Chinese central bank prior to establishment of the SGE in 2002. These newly introduced gold investment products provide the opportunity for local investors to buy and own gold at a lower cost.

Chart 37: Performance of gold and the Shanghai Gold Exchange Au9999 Gold Index (Yuan)



Source: the BLOOMBERG PROFESSIONAL™ service, WGC

During the last decade, there has been a shift in the direction of global investment flows. Asia has built up large trade and foreign exchange surpluses with the Western world and China is increasingly becoming the target destination of global foreign investment. The ongoing growth and expansion of the Chinese economy has resulted in an abundance of investment opportunities. Currently, a number of new investment funds have been launched in Western markets to take advantage of the rise of China.

As China becomes more integrated within the global economy, a growing number of foreign and domestic companies are looking for opportunities to expand their business into and out of China. For example, the Shanghai

<sup>9</sup> Shanghai Daily, 2 January 2008

<sup>10</sup> Xinhua News Agency, 31 January 2010

registration rules for foreign investors entering joint ventures (JVs) were recently simplified to facilitate the development of foreign private equity (PE) firms in China. Foreign companies applying to form JVs in non-restricted industries can now apply directly to local authorities for approval instead of the Ministry of Commerce, significantly speeding up and simplifying the process. In March 2010, Carlyle Group and Fosun Group received their PE JV license to launch a US\$100mn renminbi-denominated PE fund and became the first to be registered in Shanghai<sup>11</sup>. Overseas firms may also be interested in obtaining a listing on Shanghai's international board which will launch in 2010.

China Investment Corporation (CIC), a sovereign wealth fund incorporated in Hong Kong, announced in October 2009 a move into commodities and real estate. CIC has disclosed that it owned equity stakes worth a combined US\$9.63bn in more than 60 USA-listed companies at the end of 2009, including an investment valued at around US\$3.54bn in Canadian miner Teck Resources. The Wall Street Journal reported that approximately a quarter of the US\$9.63bn total is in exchange-traded funds (ETF), including gold ETFs<sup>12</sup>. According to US Securities and Exchange Commission filings in February 2010, CIC took a 1.45mn-share stake worth US\$155.6mn holdings in the SPDR Gold Trust Shares, the biggest gold ETF backed by allocated physical gold.

We believe that the recent financial crisis has increased caution in Asia and made Asian investors aware of the need for a hedge against the possibility of further weakening in the US dollar to which they are heavily exposed. Gold's dollar hedging properties make it appropriate for this purpose.

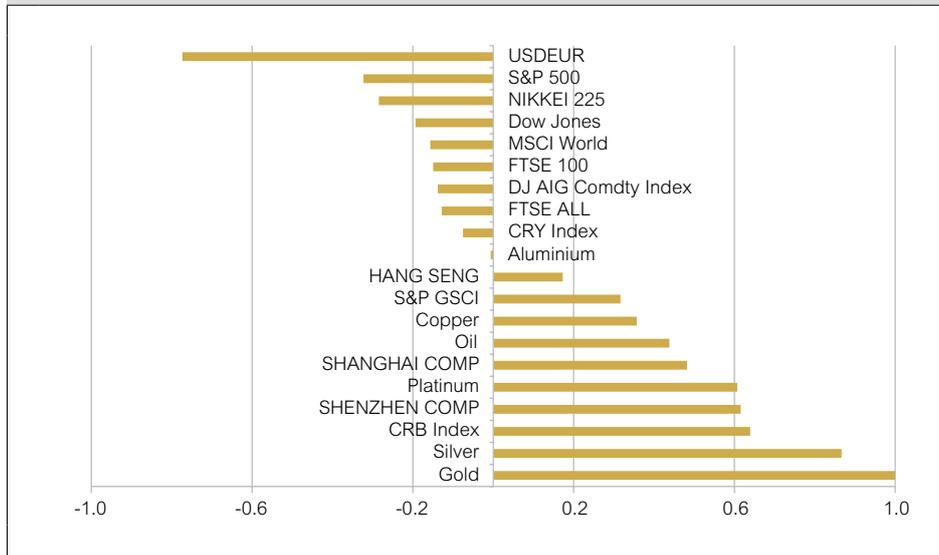
### **Gold as an asset class**

Using five year data on gold and other assets, we find that gold has a low to negative correlation with mainstream financial assets. This makes gold an ideal addition to a portfolio when it comes to managing portfolio risk, as the analysis suggests that while core macroeconomic variables are the critical determinant of financial index performance, they have no impact on the real price of gold.

<sup>11</sup>China Economic Review, 4 March 2010

<sup>12</sup>China Economic Review and The Wall Street Journal, 9 February 2010

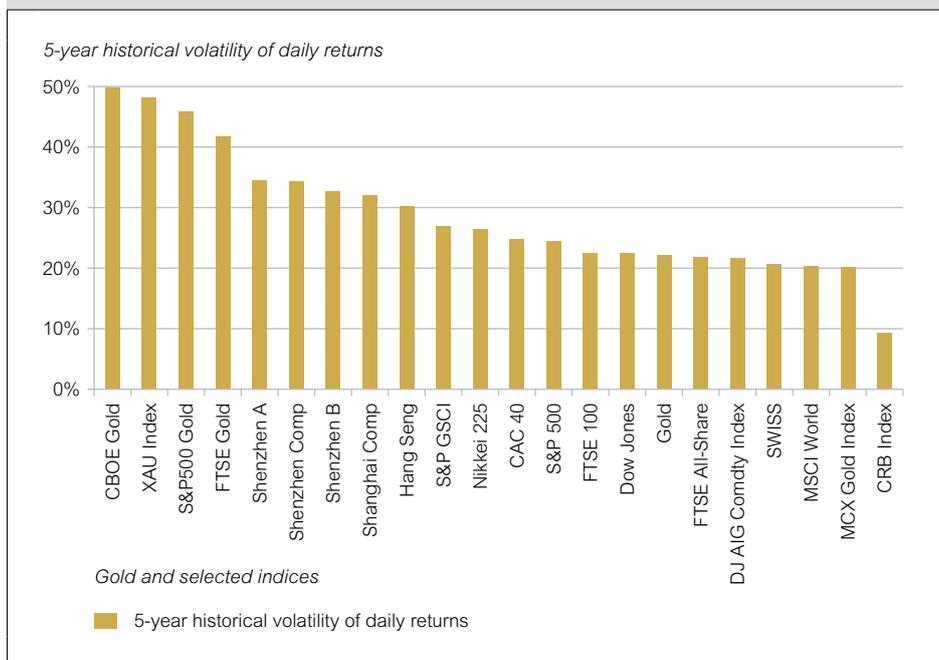
Chart 38: Historical correlation of daily returns, 5 year ending December 2009



Source: the BLOOMBERG PROFESSIONAL™ service, WGC estimates

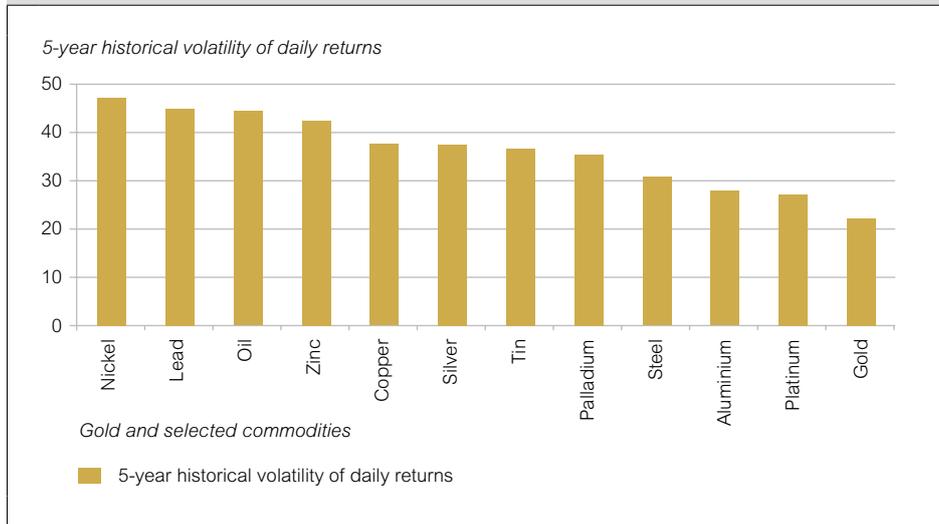
The real value of gold for investors also lies in its relatively low volatility. Although gold's volatility has increased over the last two years, it has remained significantly less volatile than other commodities and less volatile than other major equity indices. The following charts show that gold is not particularly volatile over the 5-year period ending December 2009.

Chart 39: Gold and selected indices. Volatility of daily returns, 5 year ending December 2009



Source: the BLOOMBERG PROFESSIONAL™ service, WGC estimates

Chart 40: Gold and selected commodities. Volatility, 5 year ending December 2009



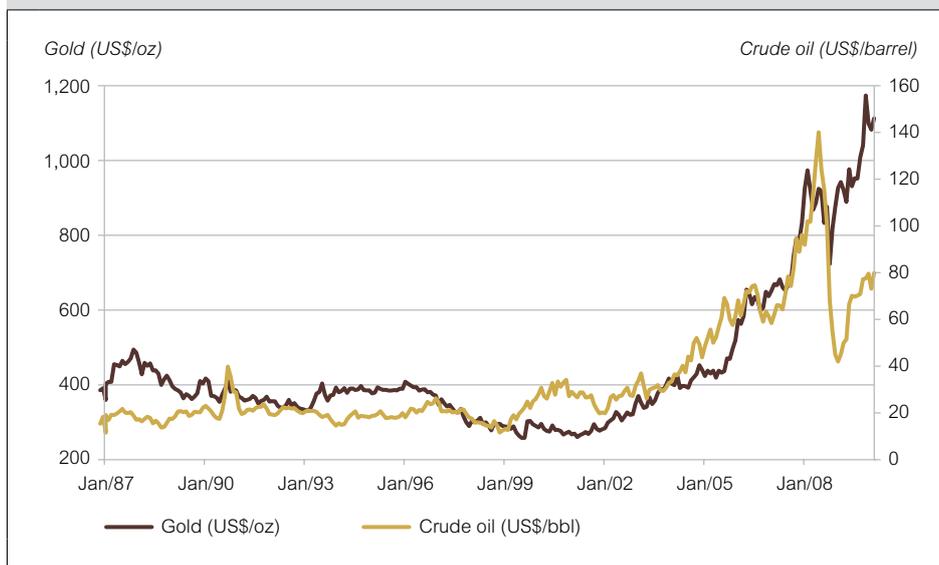
Source: the BLOOMBERG PROFESSIONAL™ service, WGC estimates

The credit crisis has triggered fresh investment demand for gold as a store of value, similar to the caution which was experienced during the SARS crisis. Capital preservation buying has spurred greater demand but this should not be regarded as simply speculative or purely return driven. Evidence suggests that it is more strategic; rooted in gold’s diversification qualities, its ability to hedge against macro economic factors and currency fluctuations.

**Gold – oil price ratio**

Historically, gold tracks the performance of oil price. During the credit crisis however, when most commodity prices fell in tandem with oil, which dropped 56%, gold did not respond the same way. This lack of correlation is clearly illustrated in the graph below.

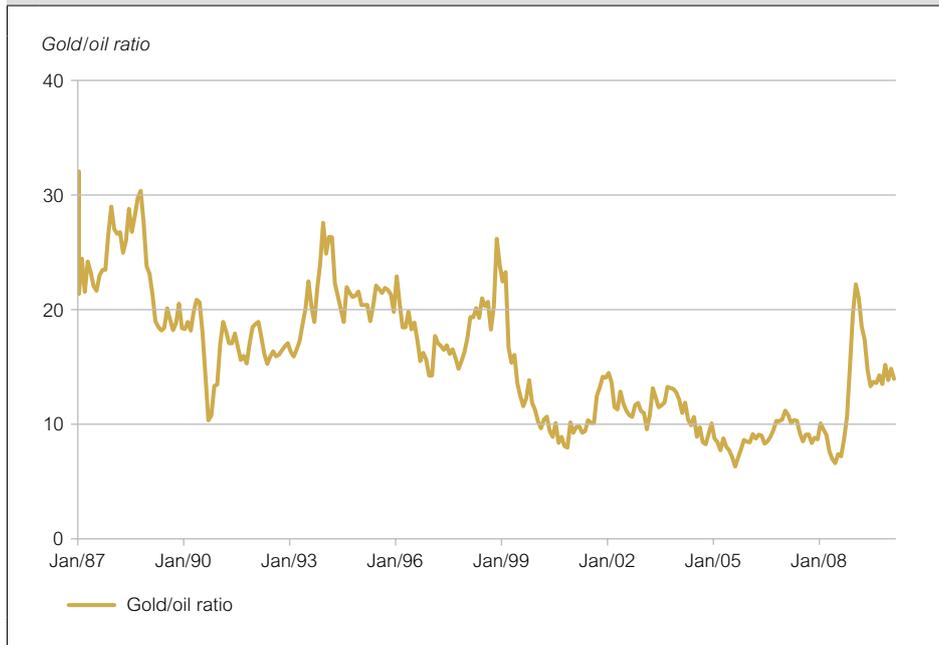
Chart 41: Gold (US\$/oz) and crude oil (US\$/barrel)



Source: the BLOOMBERG PROFESSIONAL™ service, WGC

The average gold to oil-price ratio since 1987 is around 15.9x but gold has reacted to volatility in the oil price. The current gold to oil price ratio of 14.0 implies a gold price of US\$1,266/oz, assuming an oil-gold ratio of 0.1 oz/barrel and spot oil price of US\$80/barrel.

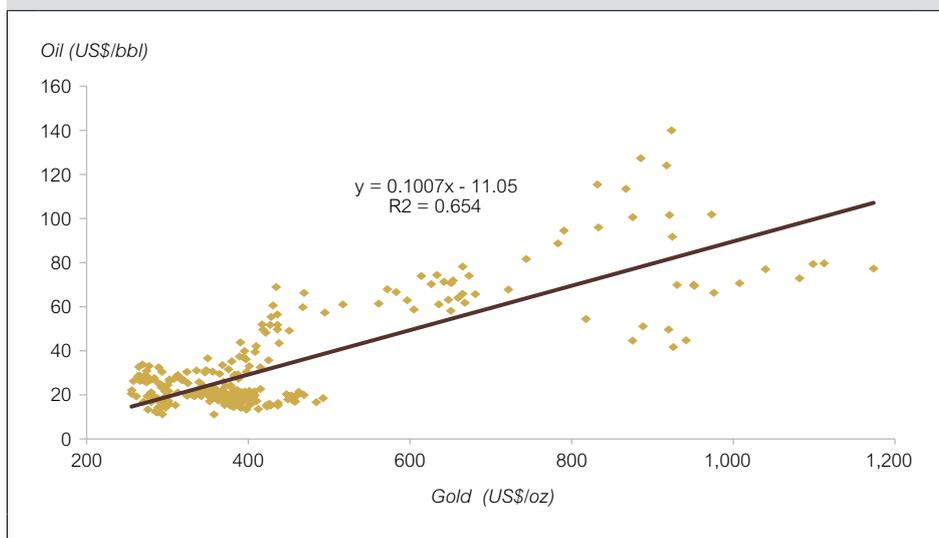
Chart 42: Gold – oil ratio



Source: the BLOOMBERG PROFESSIONAL™ service, WGC estimates

The graph below displays the relationship between the oil and gold prices in US dollar terms since 1987. The correlation between the oil and gold price implies that, for each US\$1/bbl rise in the oil price, the gold price will increase by around US\$65/oz.

Chart 43: Relationship between gold and oil price

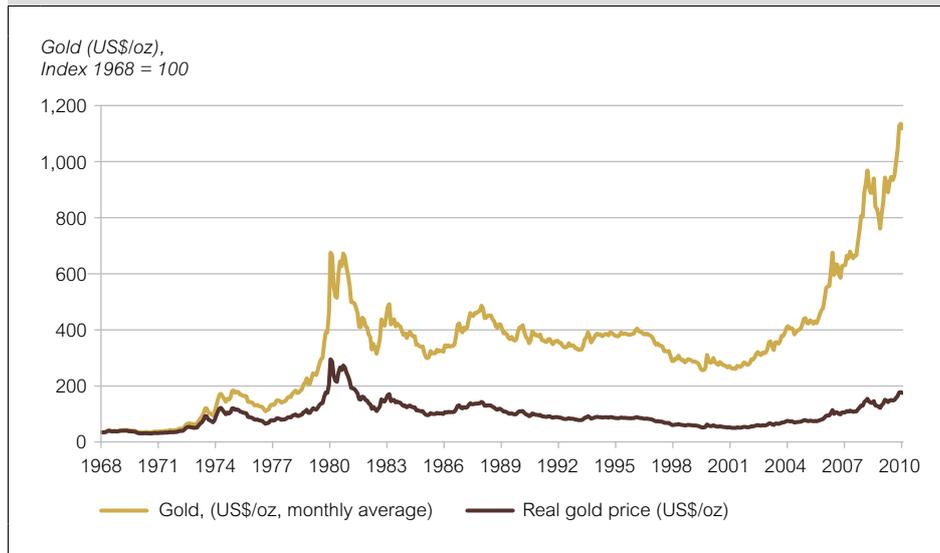


Source: the BLOOMBERG PROFESSIONAL™ service, WGC estimates

**Gold – inflation**

The graph below shows the nominal and real price of gold in US dollars since 1968. Gold has proved itself as an effective hedge against inflation and has maintained its purchasing power over the period.

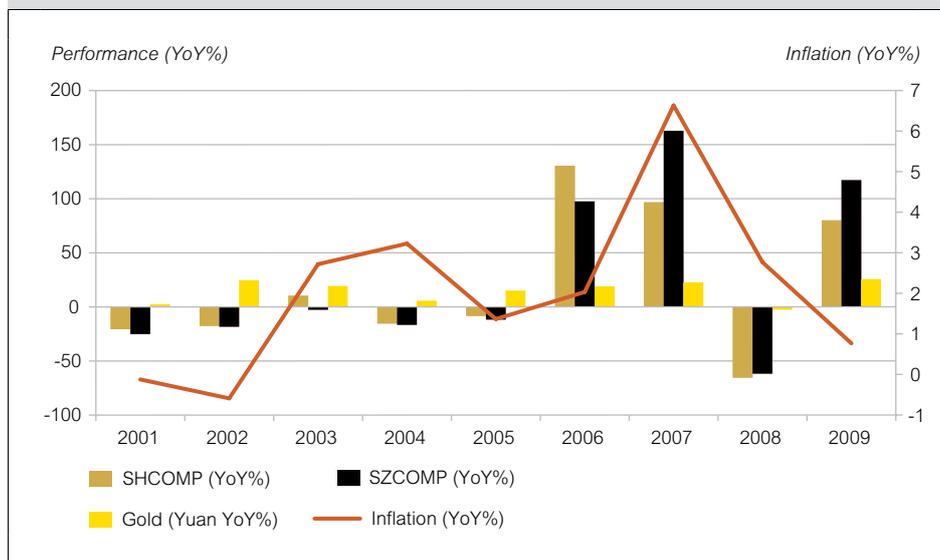
Chart 44: Gold price – nominal and real (1968 = 100)



Source: the BLOOMBERG PROFESSIONAL™ service, WGC estimates

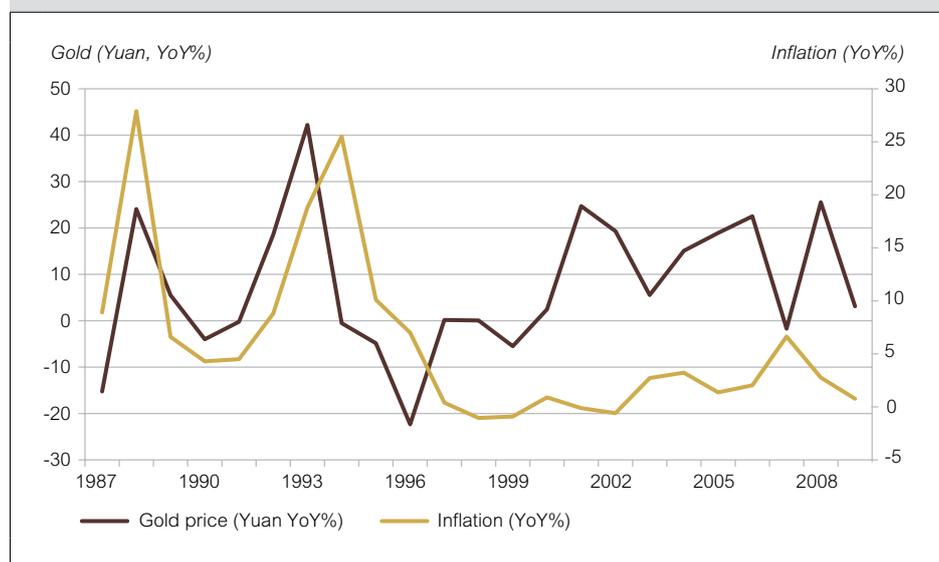
In common with other commodities, gold yields no coupon, dividend or cash return. However, we have found that since 1987, gold performed well during high inflationary periods in China. It also provides the benefit of holding value during periods of deflation. Local investors have sought to protect their portfolio wealth with gold as the store of value, as a currency.

Chart 45: Performance of selected equities in China and Gold in Yuan (% annual return, Dec/Dec)



Note: SHCOMP = Shanghai Stock Exchange Composite Index, SZCOMP = Shenzhen Composite Index.  
Source: the BLOOMBERG PROFESSIONAL™ service, IMF, WGC estimates

Chart 46: Gold and Chinese inflation (YoY%)



Source: the BLOOMBERG PROFESSIONAL™ service, WGC estimates

Nearer term inflation risk in China remains skewed to the upside and should support the gold price. A recent survey conducted by the Federation of Logistics and Purchasing in China points to greater inflationary pressures, with rising input and output prices<sup>13</sup>.

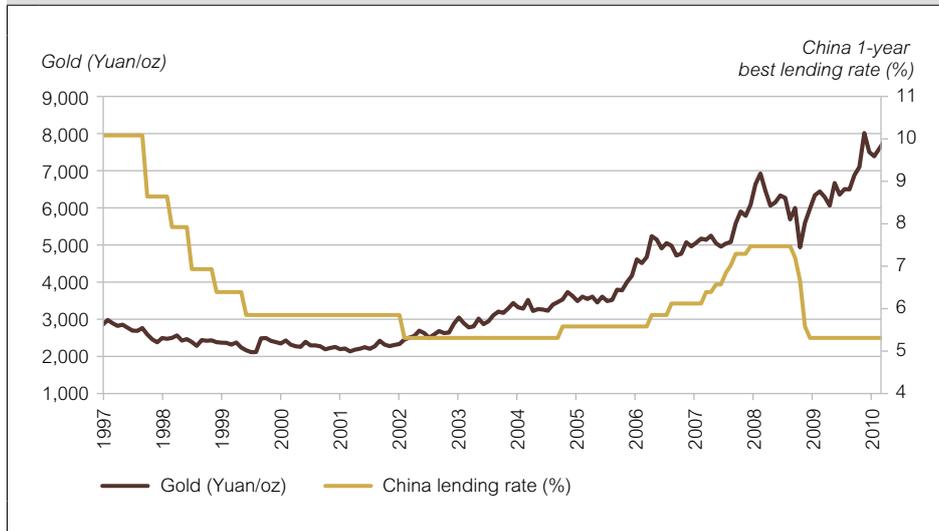
If inflation does materialise, then traditional inflation hedges such as gold are likely to outperform other mainstream financial assets. Investors, who are unsure whether to add an inflation hedge to their portfolio, should take solace in the fact that gold can be shown to enhance an investors' risk-adjusted returns over the long term.

### Gold – Chinese interest rates

We have examined the Chinese one-year best lending rate and local gold price available on Bloomberg since 1997. If the past trend is indicative, history shows the Chinese lending rate to be an unreliable indicator of future gold price in local currency terms. As shown in the graph and the correlation results below, the relationship between Chinese interest rates and the level of the Yuan gold price has, at best, been uncertain since 1997.

<sup>13</sup>The Daily Telegraph, 2 February 2010

Chart 47: Gold (Yuan/oz) and China 1-year best lending rate (%)



Source: the BLOOMBERG PROFESSIONAL™ service, WGC

Table 48: Correlation between China lending rate and gold (Yuan/oz)

Time horizon from end of 2009	Correlation result
5-year	-0.41
10-year	0.07
15-year	-0.36

Source: The BLOOMBERG PROFESSIONAL™ service, WGC estimates

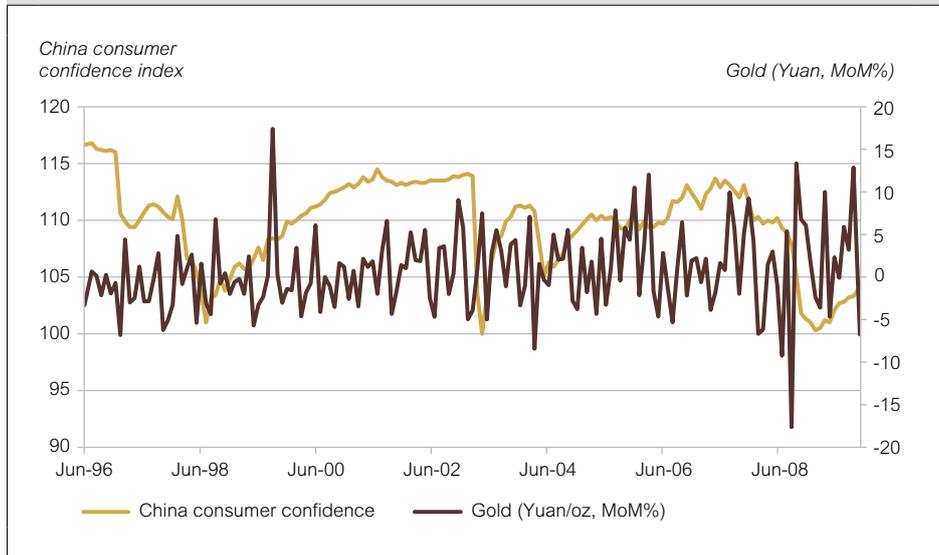
The table above shows that for the past 15 years, there was a negative correlation of -0.36 between the China lending rate and the Yuan gold price, however the correlation over the last decade was a positive one (10-year: +0.07). Recent results show that this relationship switched back to a negative correlation since the gold price in Yuan terms continued to climb and the Chinese lending rate declined.

### Investment – conclusion

In summary, we believe that demand for gold will continue to be strong in the future in the Chinese gold investment sector. With most policy makers, including the US Federal Reserve, keeping short-term interest rates low to stimulate economic recovery, money market rates are likely to remain near zero and below historic levels for some time.

This suggests that the continued exodus from money funds in search of higher yield, low risk assets will continue.

Chart 49: China consumer confidence and gold (Yuan/oz, MoM%)

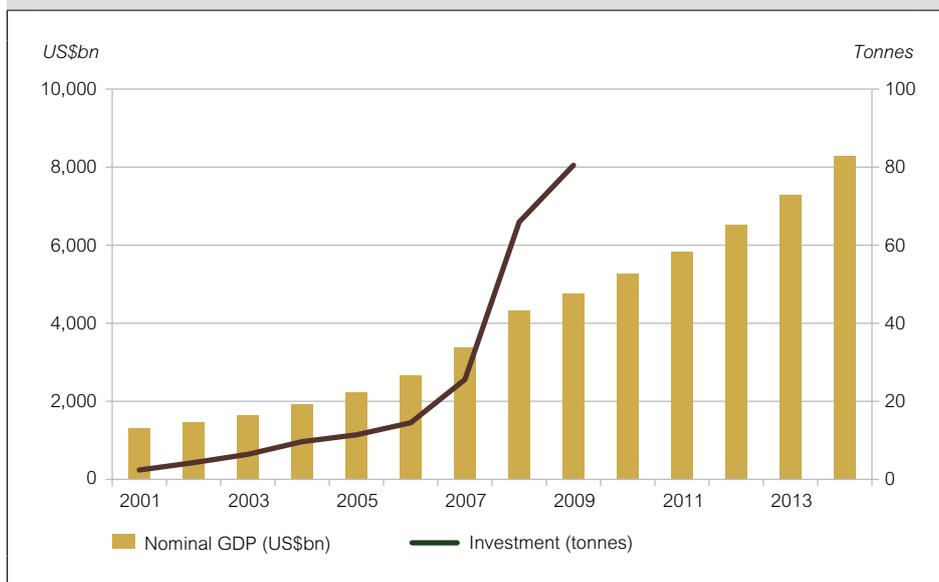


Source: the BLOOMBERG PROFESSIONAL™ service, WGC estimates

We expect that investors will continue to seek to build (or in some cases rebuild) wealth while minimising the variability of returns, particularly as their confidence in the economic recovery grows. Demand for gold by private investors as a long duration capital preservation asset will therefore continue.

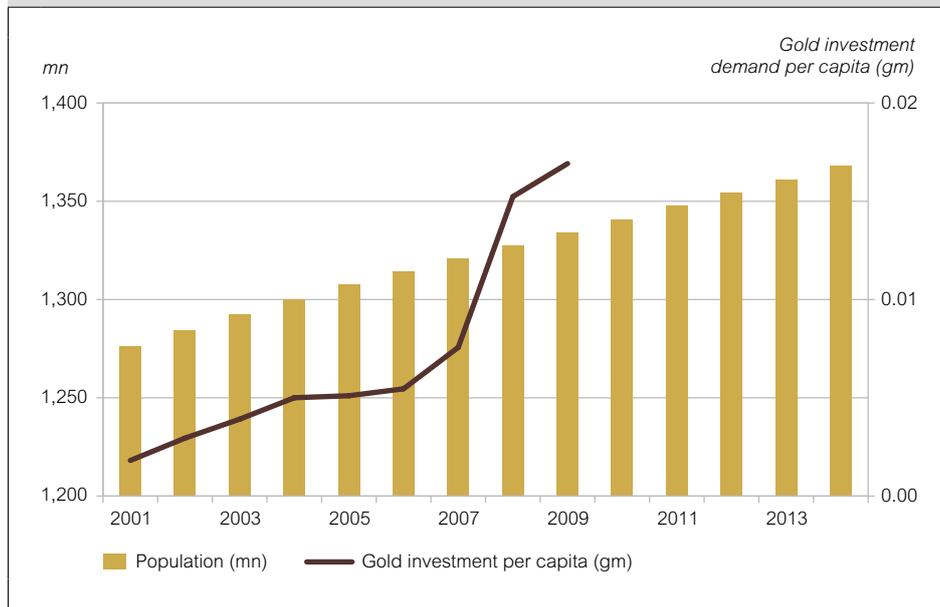
Given that the Chinese gold industry was liberalised less than a decade ago, it is still a developing market in China. Total gold investment demand in China has grown in line with the country’s GDP and population during this period and we expect this trend to continue going forward.

Chart 50: Annual GDP (US\$bn) and gold investment demand in China (t)



Note: GDP figures based on IMF data.  
Source: GFMS, IMF, WGC estimates

Chart 51: Population (mn) and gold investment demand per capita in China (t)



Note: Population figures based on IMF data.  
Source: GFMS, IMF, WGC estimates

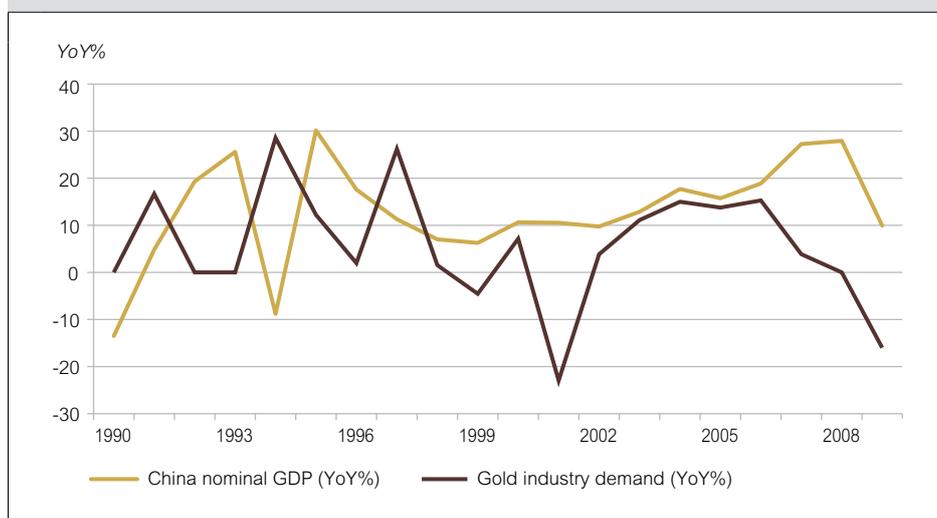
Perhaps gold will play a greater role in risk management as new assets are added to the portfolio mix to maximise total returns. In the periods considered, gold is proven as a reliable diversifier which has consistently exhibited a lower average volatility than most mainstream assets and commodities. We believe the real value of gold for fund managers and pension professionals lies in its capacity to provide a sure and steady means of enhancing the consistency of overall investment returns giving funds the confidence to move back to a managed extent into more risky assets.

## Industrial demand

Industrial and dental uses account for nearly 12% of global gold demand or an annual average of 428 tonnes from 2004 to 2009, inclusive. More than half of the gold used in technical applications goes into electronic components because of gold's high thermal and electrical conductivity, as well as its outstanding resistance to corrosion. While some substitutes are occasionally used in electronic components (copper, silver or nickel etc), high reliability, long-life and high performance components require gold. Gold is therefore found in applications such as computer keyboard circuits and electrical contacts in IT and military applications, as well as safety applications such as the contacts for air bags in cars.

The contribution of electronics to total gold demand, which has grown overall during the past decade, fluctuates according to global GDP and the fortunes of the electronics industry. Most manufacturing of electronic components containing gold occurs in North America, Western Europe or Eastern Asia.

Chart 52: China nominal GDP and gold industrial demand in China (YoY%)



Source: the BLOOMBERG PROFESSIONAL™ service, WGC estimates

The earliest medical uses of gold can be traced back to the Chinese in 2,500BC. Today gold has medical uses in dental and other health care applications, such as the use of gold wires in pacemakers, gold plated stents used in the treatment of heart disease, implants for the eye and inner ear, and gold seeds used in the treatment of prostate cancer. Gold drugs are effective in treating rheumatoid arthritis.

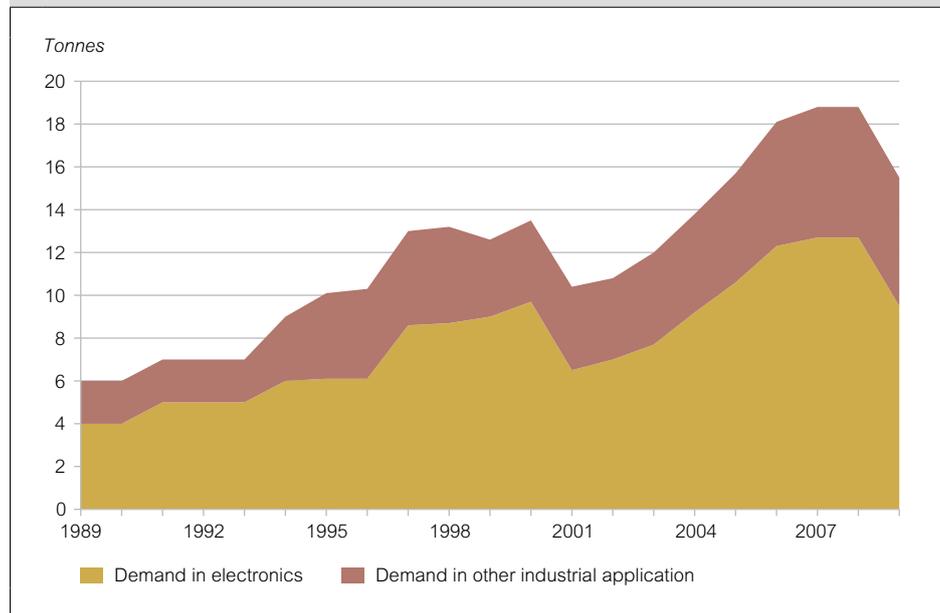
Gold is also employed in a number of other industrial and decorative purposes including gold plating and coating and in gold thread (used in textile work). Various techniques are employed to enable gold to be used in decorative finishes.

A number of new applications for gold have been and are being researched to unlock new uses, some of which appear to have substantial potential in increasing the industrial use of gold<sup>14</sup>. The use of gold as a catalyst in fuel cells is one of the most exciting new developments in the gold market. A number of companies are known to be developing industrial catalysts based on gold and this could lead to important new demand for the metal, not least in the automotive industry for the reduction of nitrogen dioxide gases from lean burn engines, which currently consume large quantities of other precious metals like platinum. Gold's efficiency at cleaning up dioxins also throws open the possibility of cleaning incinerator waste gases.

In the rapidly developing field of nanotechnology there are many possible applications, including the use of gold in solar cells, improved LCD displays using gold nanorods, for example, in mobile phones and laptops. Gold can also be used in the development of new technologies to store terabytes of data on a single disc or flash memory device. Mobile phones contain a higher concentration of gold per unit than any other electronic device.

<sup>14</sup>WGC's Gold and nanotechnology in the age of innovation report, January 2010.

Chart 53: China gold industrial demand (t)

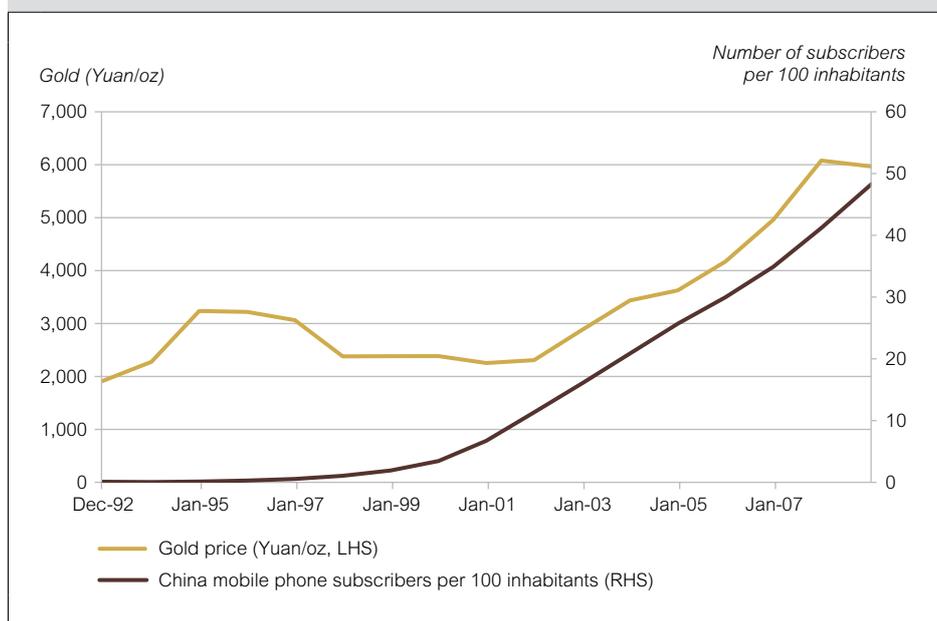


Source: GFMS, WGC estimates

China's gold consumption in industrial applications has been steadily growing over the past ten years and has averaged 15 tonnes of gold per annum during this period.

There is potential for further growth owing to the rise of incomes and improvements in living standards in China. Despite the rapid growth in the Chinese mobile and electronic markets, the country's population of approximately 1.3bn still implies significant pent up demand. According to China Today, there were 338mn internet users in the country by the end of June last year, outnumbering the total internet user population in the USA. China's 3G population reached 9.77mn users by October 2009 and the country currently has approximately 440mn mobile phone users with the number of subscriptions still growing. China Today also found that almost a quarter of China's internet users were regularly engaged in on-line shopping by mid-2009, which is 50% higher than the previous year.

Chart 54: Gold (Yuan/oz) and ITU China mobile phone subscribers per 100 inhabitants



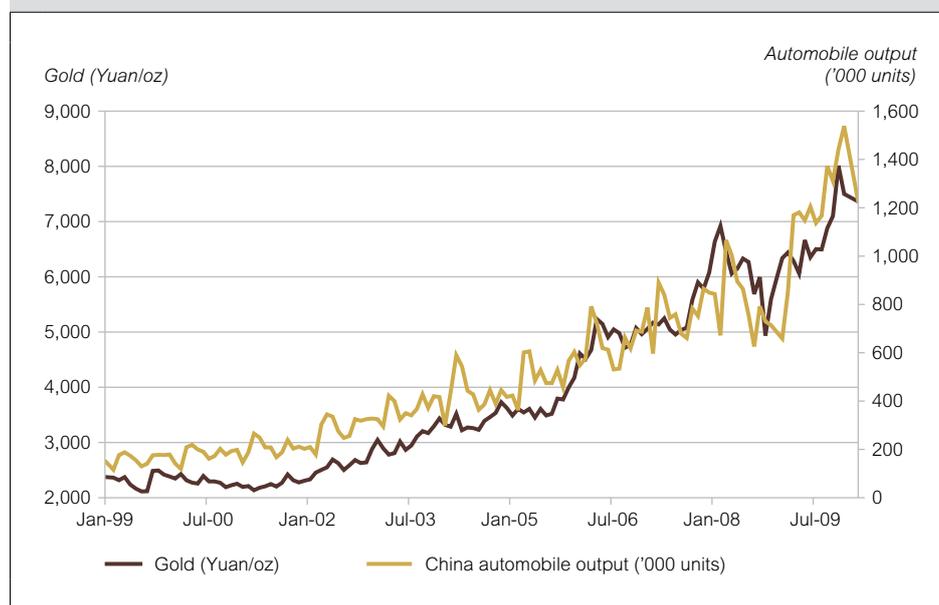
Source: the BLOOMBERG PROFESSIONAL™ service, International Telecommunication Union, WGC estimates

Over the medium term, industrial demand is likely to recover as global economic conditions and Chinese exports improve. In the longer term, WGC expects industrial demand to rise following the potential launch of gold auto catalysts to reduce carbon monoxide emissions, as well as growth in mobile phone usage which is set to multiply among an expanding middle class. A total of 10.3mn passenger cars were sold in China (up 6% from 2008) which means China is likely to be the world's largest vehicle market in 2009. Fairfax forecasts car sales in China to increase by an average of 20% per annum between 2010 and 2014<sup>15</sup>. China's National Passenger Car Information Exchange Association recently reported that China's passenger car sales reached 1.1mn in December 2009 and sales figures may have exceeded 1mn units again in January 2010<sup>16</sup>. Automakers such as Dongfeng Peugeot Citroen, Changan Ford, and Shanghai General Motors achieved record sales in December 2009, while sales growth of Cherry Auto and Shanghai General Motors both surpassed 200% despite the credit crunch and recession.

<sup>15</sup>Miningmx, 28 December 2009

<sup>16</sup>China4Auto.com, February 2010

Chart 55: Gold (Yuan/oz) and China automobile output ('000 units)



Source: the BLOOMBERG PROFESSIONAL™ service, WGC

We expect the use of gold in the medical sector to continue to rise, particularly considering the ageing population and improving medical facilities in China. The table below shows the proportion of the population over 65 years of age in China. This demographic will experience a robust growth over the next twenty years as the baby boomers turn 65 in 2011. The growth in this age group is expected to accelerate even faster in many parts of the world, driving increased healthcare spending for decades to come.

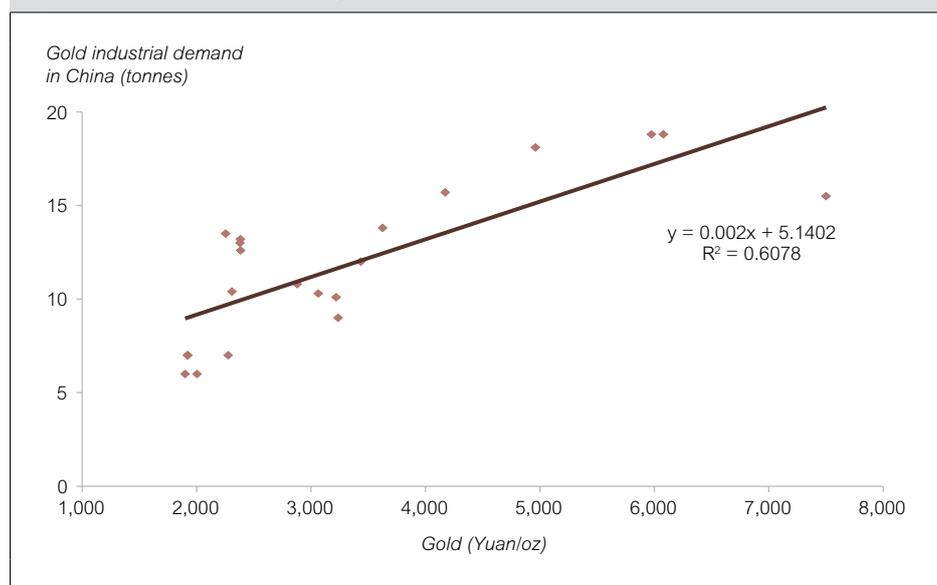
Table 56: Largest &gt; 65 populations globally

Rank	Country	Growth (mn)	Growth (2008-2040*) (%)	CAGR **
1	China	106	209	3.6
2	India	60	274	4.2
3	USA	39	107	2.3
4	Japan	28	30	0.8
5	Russia	20	34	0.9
6	Germany	17	41	1.1
7	Indonesia	14	223	3.7
8	Brazil	12	225	3.8
9	Italy	12	49	1.3
10	France	10	69	1.7
11	United Kingdom	10	66	1.6
12	Ukraine	7	23	0.6
13	Spain	7	45	1.2
14	Pakistan	7	206	3.6
15	Mexico	7	232	3.8

Source: Note \* E=Estimates; \*\* CAGR=Compound Annual Growth Rate; U.S. Census Bureau, Kaiser Family Foundation, International Data Base

The demand for gold in industrial applications is also expected to rise rapidly as China becomes the world's manufacturing centre as a result of increased purchasing power among private individuals. As we highlighted earlier, almost 80% of gold consumed in China is used to make jewellery.

Chart 57: Relationship between gold industrial demand in China (t) and price (Yuan/oz)



Source: GFMS, WGC estimates

## Central bank – the People's Bank of China

For centuries central banks have been regarded as the prime holders of gold as a guarantee of their currency issuance, reserves and for settlement purposes. Total global central bank ownership of gold reserves reached 30,190 tonnes as at the end of January 2010. The United States, Germany, Italy and France held significant gold stocks for many years while in the past China remained loyal to silver.

Table 58: Top 20 official gold holdings (January 2010)

Rank	Country	Tonnes	Rank	Country	Tonnes
1	USA	8,133	11	India	558
2	Germany	3,407	12	ECB	501
3	IMF	3,005	13	Taiwan	424
4	Italy	2,452	14	Portugal	383
5	France	2,435	15	Venezuela	361
6	China	1,054	16	United Kingdom	310
7	Switzerland	1,040	17	Lebanon	287
8	Japan	765	18	Spain	282
9	Russia	641	19	Austria	280
10	Netherlands	612	20	Belgium	228

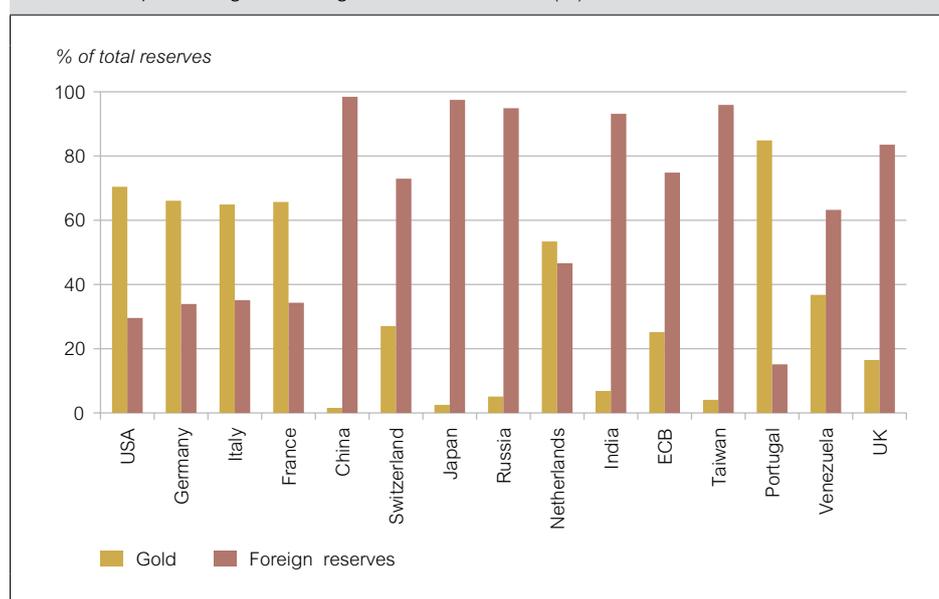
Note: The value of gold holdings is calculated using the end-January 2010 gold price of US\$1,078.50 per troy ounce (there are 32,151 troy oz in a metric tonne). Data for the value of other reserves are taken from IFS, table 'Total Reserves minus Gold'. IMF balance sheet does not allow this percentage to be calculated.

Source: IMF (World official gold holdings as at the end of January 2010, March 2010 Report), WGC estimates

Prior to October 2002, all gold producers in China were required to sell their gold to PBoC. Under the 1983 Regulations on the Administration of Gold and Silver, PBoC is the competent agent authorised to supervise and control the purchase and distribution of gold and silver in China. The PBoC was responsible for the state's reserves of gold and silver, including their purchase, allocation and sale. It also regulated and supervised the gold and silver markets.

With the exception of the USA and major European central banks, many other central banks around the world hold either no gold or a very small percentage of their total reserve in gold, as illustrated in the below figure.

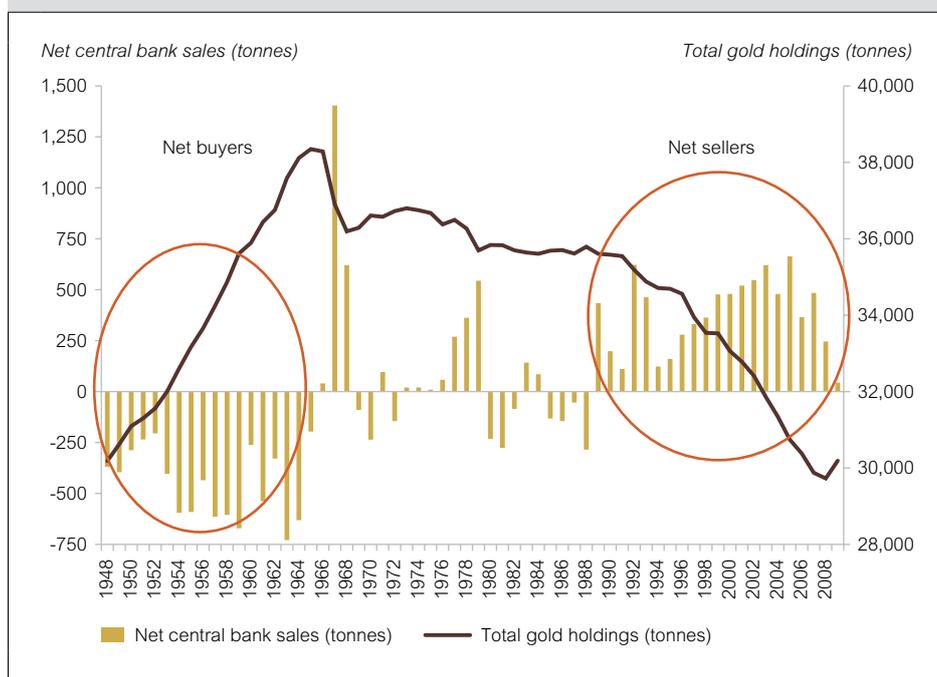
Chart 59: Top official gold holdings reserves allocation (%)



Source: IMF, WGC estimates

This situation is beginning to change. Since the second quarter of 2009, the central banks in some quarters have become net buyers of gold. Central banks have moved to the demand side from the supply side. Most noteworthy was the announcement by China's State Administration of Foreign Exchange (SAFE) that the country's official reserves had grown to 1,054 tonnes from 600 tonnes. This makes China the world's sixth largest official holder of gold in absolute terms after the United States, Germany, the IMF, Italy and France.

Chart 60: Central banks net gold sales and total official sector gold holdings (tonnes)



Note: For period ending January 2010.

Source: WGC estimates, IMF, GFMS

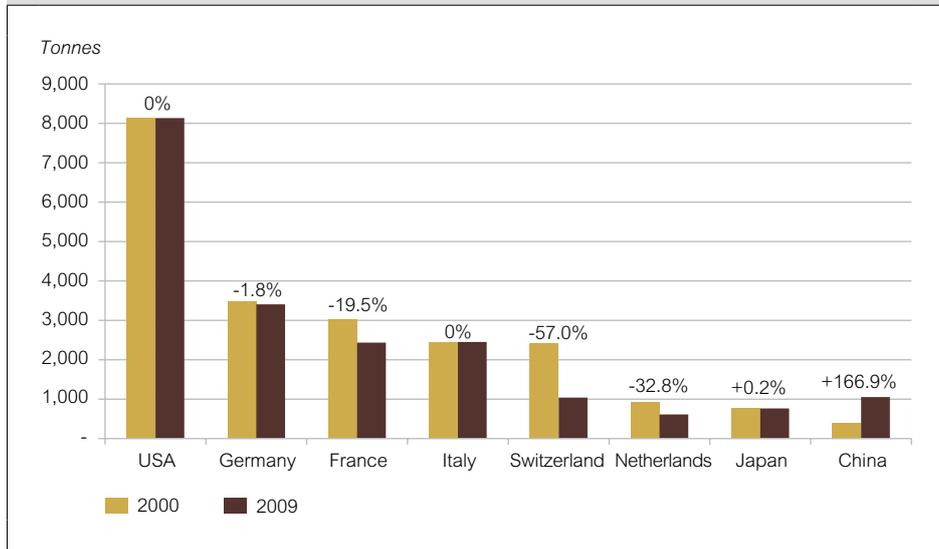
Several nations have also followed the Chinese as they reassess their long-term strategic rationale and gold reserve holdings. The IMF's International Financial Statistics, which report the gold holdings of most central banks, also reported a notable increase in Russia's gold reserves in 2008 and during 2009, taking the country's gold reserves from 450 tonnes at the start of 2008 to 641 tonnes at the end of 2009, or 5.1% of total reserves. According to Arkady Dvorkevich, Russian Chief Economic Advisor, Russia will gradually step up its share of gold reserves as a percentage of total reserves to at least 10%. In addition, Mr Dvorkevich said last year that Russia would favour the inclusion of gold bullion in the basket-weighting of a new world currency based on Special Drawing Rights issued by the IMF<sup>17</sup>. Bloomberg reported that Russia's central bank added 100,000 troy oz of gold to its reserves in January 2010, increasing its holdings to 20.6mn oz<sup>18</sup>. Recently, Alexei Ulyukayev, the First Deputy Chairman said that "Gold will always be a natural quality asset" and that the Russian central bank seeks to increase the share of gold in its international reserves<sup>19</sup>.

<sup>17</sup>The Telegraph, 29 March 2009

<sup>18</sup>Bloomberg, 19 February 2010

<sup>19</sup>Bloomberg, 3 March 2010

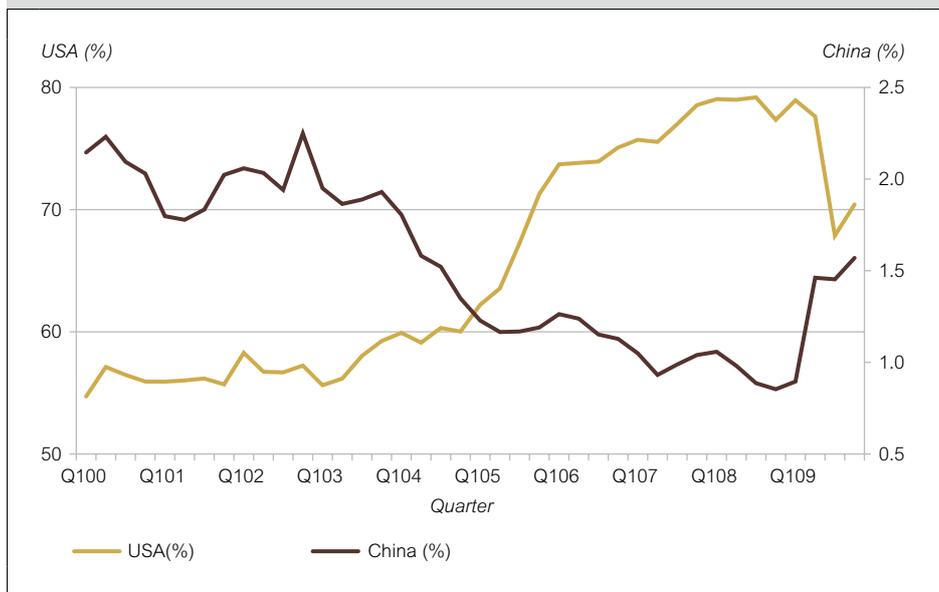
Chart 61: Gold reserves movement (tonnes)



Source: IMF, WGC

The volume of Chinese gold reserves rose 166.9% between Q1 2000 and Q4 2009. This increase helped push China's gold as a percentage of total reserves from a low of 0.9% in Q4 2008 to 1.6% at the end of 2009. This level is nonetheless below the recent recorded peak of 2.2% in Q4 2002 and still well below that seen in the Western world, suggesting that there is ample scope for further growth.

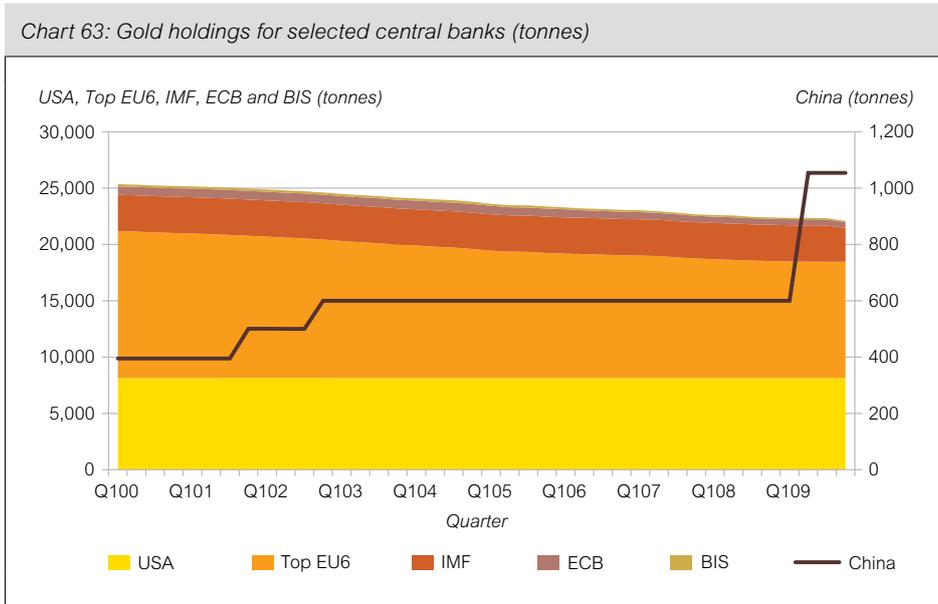
Chart 62: China and USA – gold as a percentage of total reserves (%)



Source: IMF, WGC

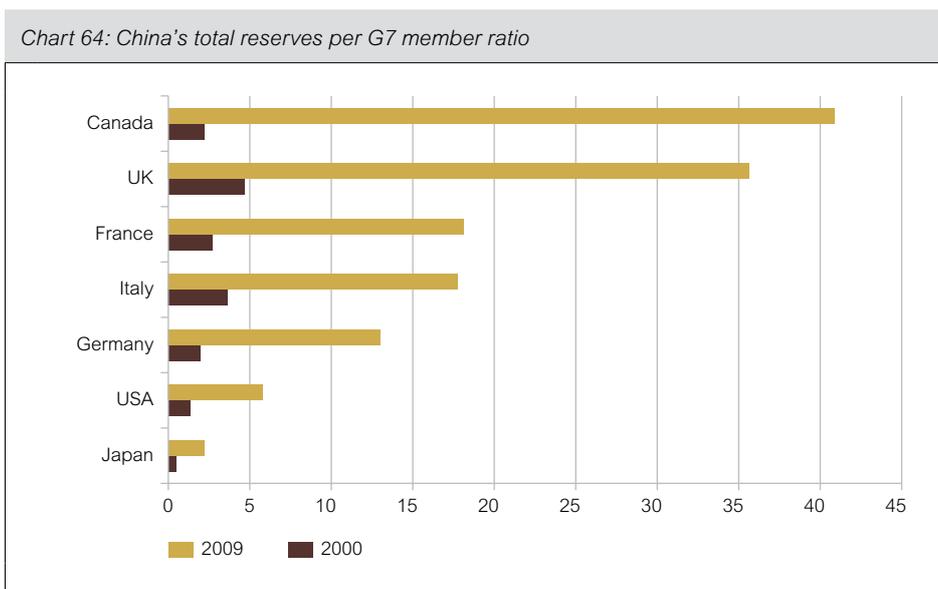
Over the past 10 years, we have seen China's gold holdings slowly creeping up, whilst the Western world's central banks have been holding or selling gold.

The figure below shows the change in gold holdings (in tonnes) since the first quarter 2000 for China and the total of the top six major European central bank gold holders (Germany, France, Italy, Switzerland, Netherlands and Portugal), plus USA, IMF, European Central Bank and BIS.



Source: IMF, WGC

China's total reserves (gold plus foreign exchange reserves) of US\$2.4tn range from two to 41 times the value of the G7 members' reserves at the end of 2009. China is already a major investor in US Treasuries but it looks as though China still has the "fire power" left in its books should the country decide to increase its gold holding reserves.



Source: IMF, WGC estimates

One factor that PBoC will consider when making a reserve balancing decision is the future performance of the US dollar. Over the last 12 months, the US dollar has depreciated against major currencies such as the Yen, Sterling and Euro and has not fared well as a preserver of capital. However there is no doubt that the US dollar will retain a role as a major reserve currency as well as a transaction currency. China, along with Japan, are the biggest single holders of US Treasuries and will certainly not benefit in precipitating a US dollar crisis since this will further devalue their trillions of US dollars in reserves and adversely impact the purchasing power of the US consumer – their major export customer.

The State Council advisor Ji Xiaonan believes China should start investing in at least 1,000 tonnes of gold per annum for its official reserves<sup>20</sup>. Mr Ji has been quoted in the Chinese media as suggesting that the nation's gold reserves should reach 6,000 tonnes in the next three to five years and perhaps 10,000 tonnes in eight to 10 years. The adjustments could be motivated by the following reasons: (1) Increasing gold as an essential component of PBoC's book could help the country meet future requirements in terms of safety and diversification of the portfolio; (2) Purchasing gold using reserves would allow PBoC to withdraw billions of Yuan now in circulation, decrease the proportion of its US\$2.4tn foreign currency reserves held in US dollar-linked investments and ease pressure on the appreciation of the Yuan.

If the PBoC were to rebalance its reserve portfolio back to its recent peak ratio of 2.2%, we estimate that the incremental demand from taking this action would amount to around 400 tonnes at today's gold price. Even an increase of 10% on its current gold reserve holding would translate to approximately 100 tonnes. These are sizable volumes that could place pressure on the country's trade balance.

PBoC has been purchasing local gold mine production and local refining of recycled gold in local currency. We believe that the PBoC prefers not to be seen switching out of the US dollar at this juncture when such a large proportion of China's foreign exchange reserves are already in dollar-denominated assets.

A withdrawal of such significant volumes out of the gold-hungry domestic market would also further increase the domestic supply-demand gap in the Chinese private sector and escalate the "snowball" effect in China. Hence, we would not be surprised to see the PBoC proceed on a gradual strategy, if it decides to increase its allocation.

The media has stated that China should allow its currency to appreciate against the US dollar this year. This, in turn, would be bearish for the US dollar and positive for real asset prices, such as gold, that are denominated in dollars.

<sup>20</sup>China Youth Daily, November 2009

<sup>21</sup>China Daily (3 July 2009) and Bloomberg (5 May 2009)

According to China Daily, policy makers have said that they are studying the idea of introducing more Yuan-denominated investment products in Hong Kong with the aim of invoicing 50% of all transactions with Hong Kong in Yuan<sup>21</sup>. At present, the Chinese Yuan is not fully convertible, although China intends to further internationalise the currency. China has arrangements in place with various countries ensuring trades can be settled directly in Yuan instead of US dollars, which was previously the case. However, there is probably a limited appetite for holding a currency that is not fully convertible and some uncertainty about the possibility of devaluation as speculated by the press.

With ongoing uncertainties surrounding the US dollar and the Yuan, the search for alternative international asset choices within the central bank sector would, in our view, clearly involve consideration of gold.

## Supply in China

### Overview

Gold production has a long history in China. According to Timothy Green<sup>22</sup>, the existence of underground gold mining in China can be traced back to 600 AD. In the Hebei province, the mining of gold can be traced back to over three thousand years ago. The Zhao Yuan gold mine in Shandong province, north-east of Shanghai, claims to have been in production for over a thousand years while other Shandong mines date as far back as the 17th Century.

The richest gold seam has always been in the Shandong Province. According to research published by the China Mining Association, the Shandong province produced almost a fifth of China's annual gold production in 2008, followed by the Henan and Fujian provinces. Shandong also hosts the majority of the country's prospective gold resources. Other major deposits are located in Hunan, Shaanxi, Sichuan, Gansu, Yunnan and Guizhou. China refines its own gold production and the majority of Chinese mines have refineries attached to them.

China's gold industry has historically been unregulated, fragmented and undercapitalised. The gold mining operations in China have typically been artisanal, (e.g., small scale, inefficient and with little mechanisation.) Artisanal mining extracted approximately 20-30% of the oxidised surface, as most of China's gold deposits are shallow, open pit operations and they are easily processed. However, the remaining ore is much less attractive to develop, due to high extraction costs and recovery levels. The underground deposits also require more advanced mining technology and processing equipment for extraction.

In the early 2000s, China's gold industry was cash-starved. A lack of government subsidies meant that investment in gold mining exploration was low. This situation was further compounded by gold's lacklustre price performance. This prompted local gold producers to look at public equity offers as a priority fund-raising channel. In 2003, there were three listed companies in the industry – Zhongjin Gold Corporation, Shandong Gold Co Ltd and Zijin Mining Co Ltd.

To maximise the potential of gold resources, China consequently opted to open its door to foreign expertise and capital investment to set up joint ventures with local mining companies. In recent years, numerous foreign mining companies (including Eldorado Gold Corporation, Sino Gold, Goldfields and Goldrea Resources Corporation) have taken this opportunity to enter China, drilling porphyry gold/copper deposit, especially in the Shandong region.

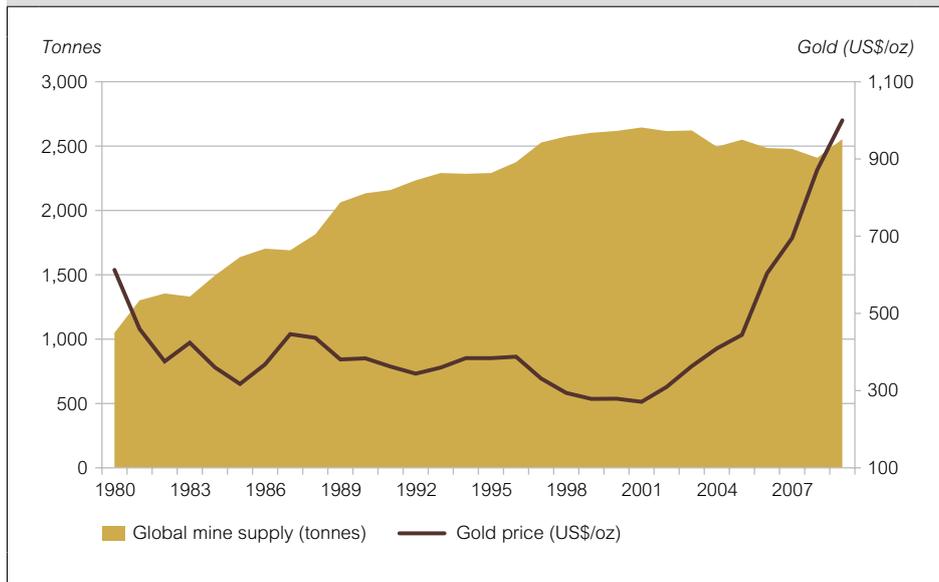
Prior to 2002, the PBoC maintained control of mine purchases and the sale of gold to retailers. Today, all gold production in China is required to be sold via the SGE. The spot price at SGE is set by the matching system between buyers and sellers on the computer trading system of SGE.

<sup>22</sup>Timothy Green (The Ages of Gold)

### Mine supply

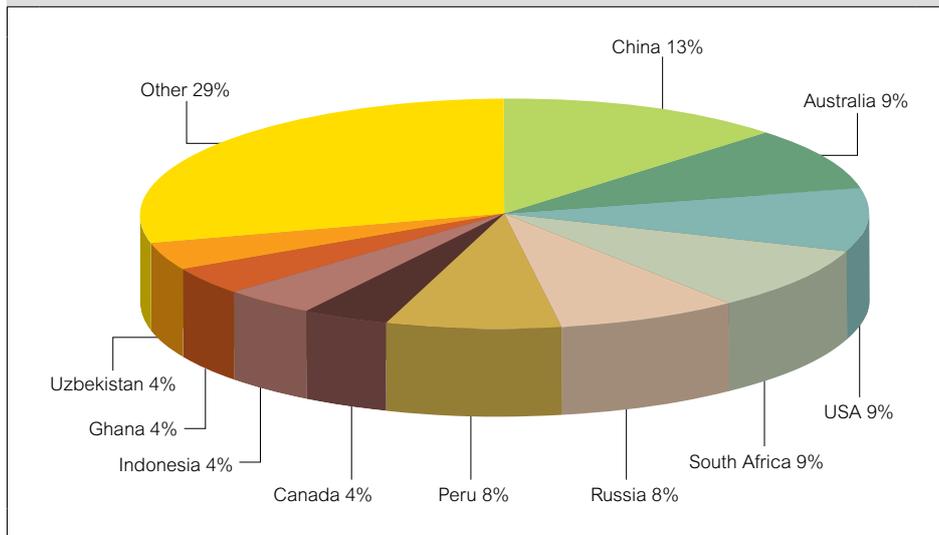
The graph below shows that global mine supply has been in a period of decline since 2001. World gold mine supply increased by 6% year-on-year to reach 2,554 tonnes in 2009, despite a 12% increase in the average US dollar gold price during the year.

Chart 65: Gold (US\$/oz) and global mine supply (t)



Source: GFMS, the BLOOMBERG PROFESSIONAL™ service, WGC

Chart 66: Gold producers by country (2009)

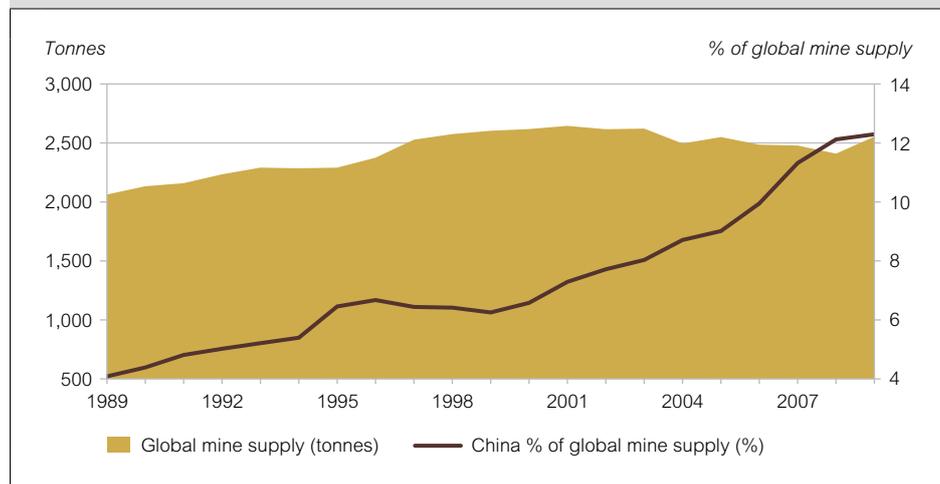


Source: USGS, WGC estimates based on USGS data

China overtook South Africa to become the world's leading gold producer in 2007. China has continued to ramp up production, increasing output for ten straight years to reach a new record in 2009 of 300 tonnes, based on the US Geological Survey's Mineral Commodity Summaries Report<sup>23</sup>. Conversely, gold mining supply from South Africa continues to fall, albeit marginally, dropping to 210 tonnes in 2009, compared to 213 tonnes in 2008.

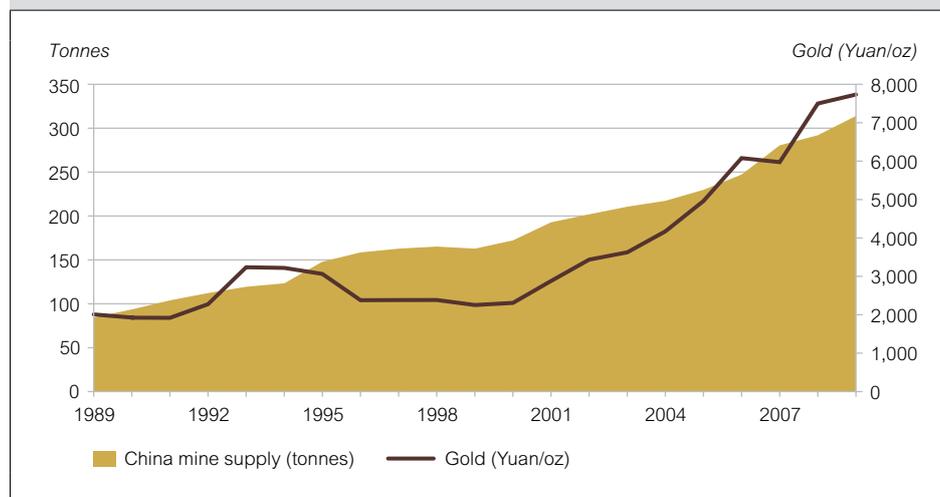
According to the latest statistics from the CGA, China produced 313.98 tonnes of gold in 2009, an increase of 11% year-on-year<sup>24</sup>. CGA reported that the top 10 gold firms in China produced around 47.31% (148.55 tonnes) of the country's total gold in 2009. The top producing provinces were Shandong, Henan, Jiangxi, Fujian and Yunnan.

Chart 67: Global mine supply and China's share of global mine output



Source: GFMS, US Geological Survey, WGC, CGA

Chart 68: China mine supply (t) and gold (Yuan/oz)



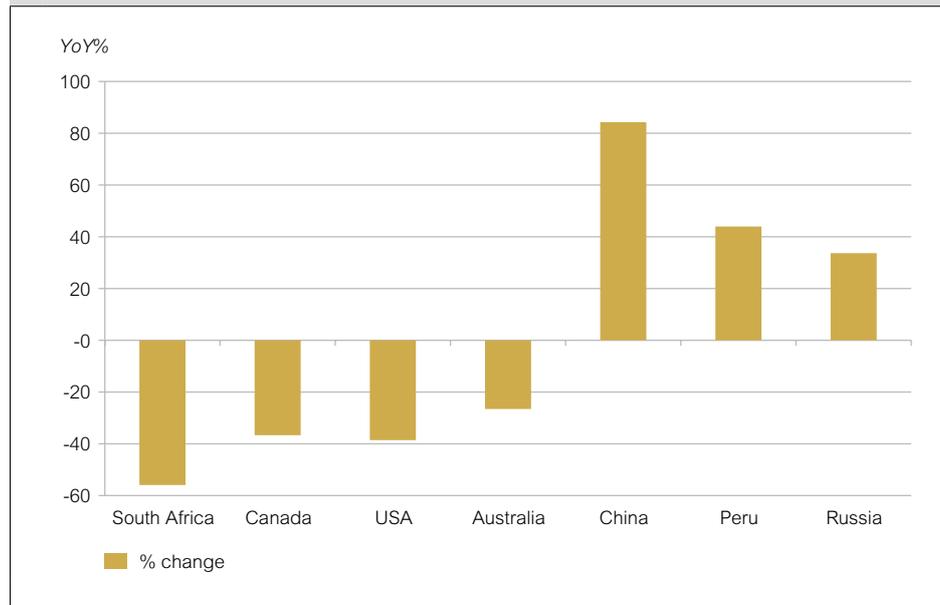
Source: GFMS Limited, US Geological Survey, WGC

<sup>23</sup>US Geological Survey, Mineral Commodity Summaries Report, January 2010

<sup>24</sup>Xinhua News Agency, 31 January 2010

During the last decade, the main emerging market gold producers, Peru, Russia and China, have increased their gold production by 44%, 34% and 84% respectively. Elsewhere major producers in South Africa, Canada, USA and Australia are experiencing substantial gold supply difficulties.

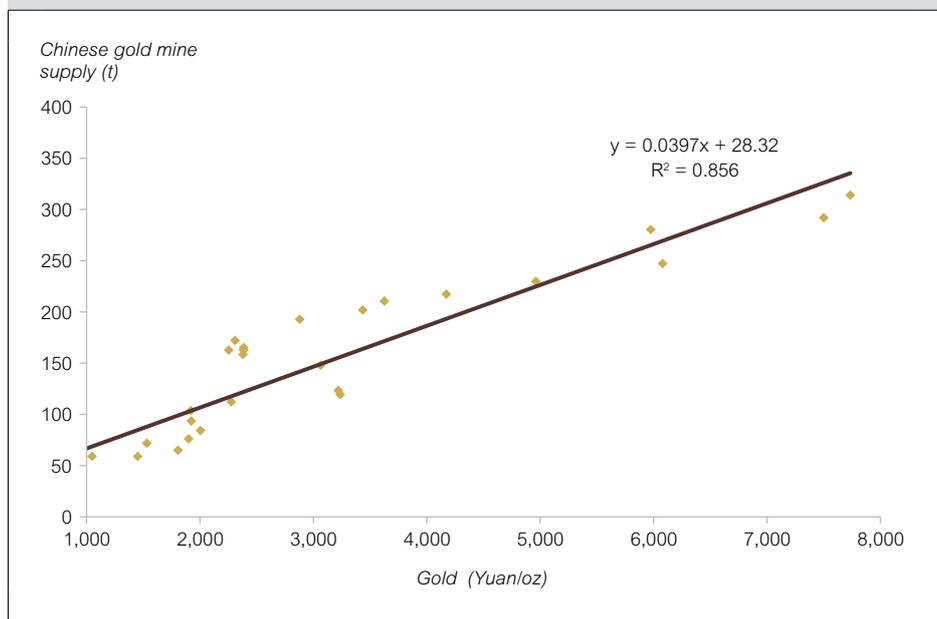
Chart 69: Gold mine production change between 1999 - 2009 (%)



Source: GFMS, US Geological Survey, WGC

Growth in the output of gold in China and in reserves is one of China's strategic targets, contained within its Eleventh Five-Year Plan period (2006-2010). The plan sets out the intention to increase China's known gold reserves to between 3,000 and 3,500 tonnes and achieve an annual gold output growth rate of 5%. In 2007, China moved three of its larger gold mines (Lan Nigou Gold Mine in Guizhou and Tanjinshan in Qinghai) into production. Simultaneously, many of South Africa's gold mines have been reaching maturity. Despite this, South Africa will continue to play an important role in global gold production, as the country still hosts around 13% of current world gold reserves.

Chart 70: Relationship between Chinese gold mine supply and gold price (Yuan/oz)



Source: GFMS Ltd, US Geological Survey, WGC, CGA

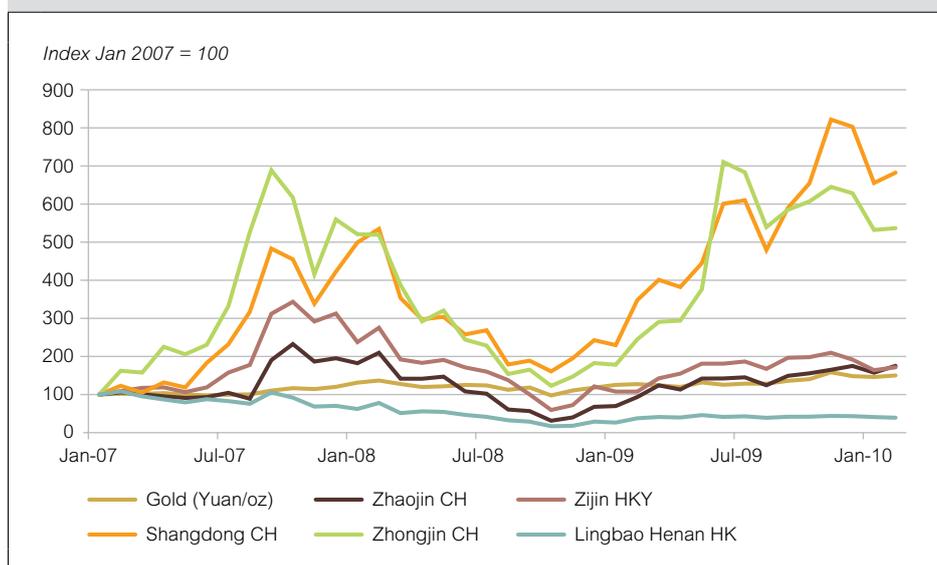
## Gold Producers – domestic and foreign

China National Gold Group Corporation (CNGGC) is the leading gold producer in China. CNGGC was established in 1979 and is a large-scale, state-owned Chinese enterprise. It operates under the name China Gold Group and controls the major gold mines in the country. The group is involved in all aspects of the gold mining industry from engineering and fabrication of heavy mining equipment to exploration, mining, refining and gold and silver bullion sales. CNGGC accounts for approximately 20% of the total gold output in China and controls over 30% of the known reserves in China. With more than 65 mines, CNGGC also controls Zhongjin Gold Corporation, the first gold miner publicly listed on the Shanghai Stock Exchange, since 2003. China Gold Corporation is the only Chinese member of WGC and the only state-owned corporation authorised to forward sell gold on the world markets. In 2008, CNGGC purchased a 42% stake in Jinshan Gold Mines from Ivanhoe Mines, which owns the Changshan Hao 217 (CSH) gold mine in Tibet.

Shandong Gold Mining is also one of China's leading gold producers. The China National Development and Reform Commission in Beijing approved Shandong's new expansion initiative at its Jiaojia gold mine in 2009.

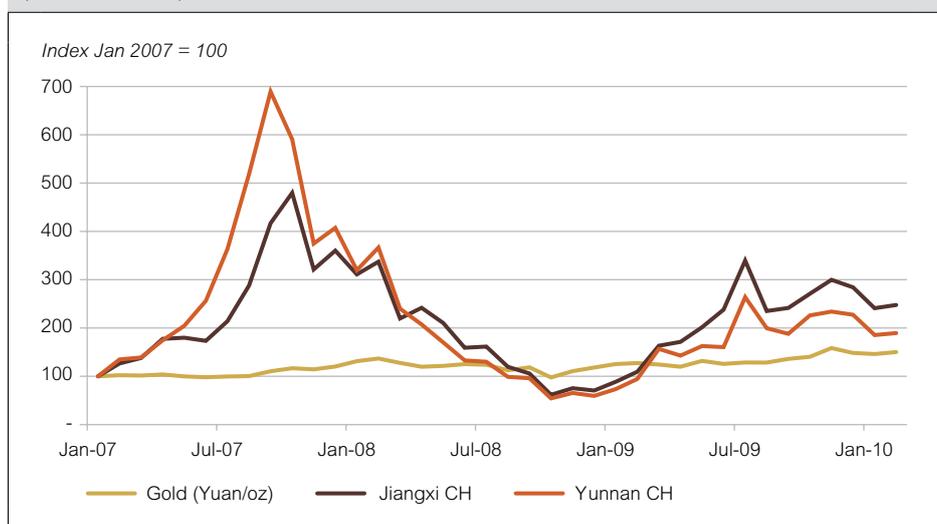
The charts 71 and 72 show the relative performance of the major Chinese gold producers and big diversified players (Yunnan Copper and Jiangxi Copper) versus the gold price in Yuan.

Chart 71: Relative performance of major Chinese gold producers and gold price (Jan 2007 = 100)



Source: the BLOOMBERG PROFESSIONAL™ service, WGC estimates

Chart 72: Relative performance of selected Chinese diversified gold producers and gold price (Jan 2007 = 100)



Source: the BLOOMBERG PROFESSIONAL™ service, WGC estimates

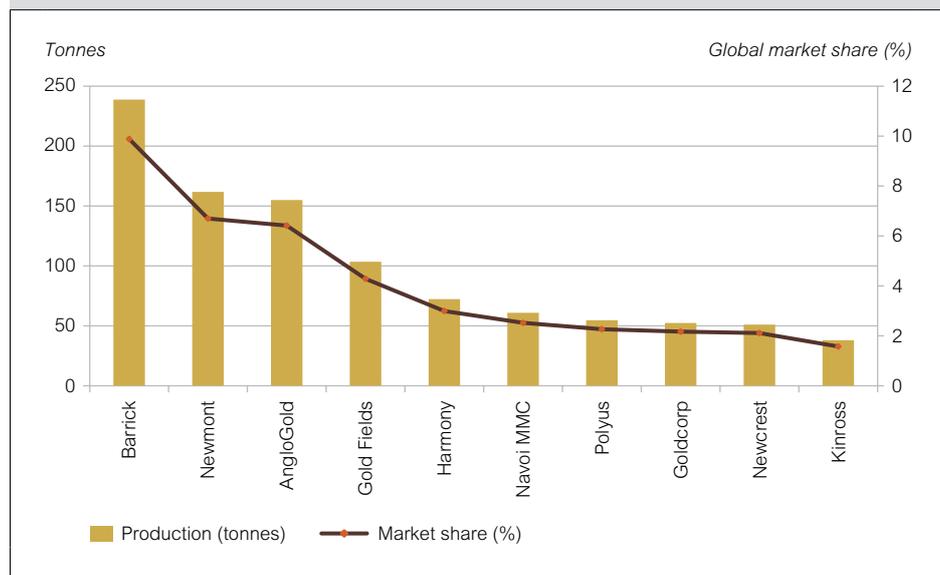
Table 73: Selected Chinese gold producers

Gold producers	Ticker	Currency	Spot	1M (%)	3M (%)	YoY (%)
Zhaojin	1818 HK	HKD	15.2	-1.8%	-6.6%	73.5%
Zijin Mining	601899 CH	Yuan	8.18	-4.9%	-21.1%	0.1%
Shandong Gold	600547 CH	Yuan	69.5	-0.9%	-16.0%	108.6%
Zhongjin	600489 CH	Yuan	48.7	-5.3%	-19.7%	127.0%
Lingbao Henan	3330 HK	HKD	2.68	-0.4%	-13.0%	0.0%
Jiangxi Copper	600362 CH	Yuan	34.04	-5.2%	-18.6%	100.2%
Yunnan Copper	000878 CH	Yuan	24.86	-4.8%	-21.6%	79.2%

Source: Spot as at 16 March 2010, the BLOOMBERG PROFESSIONAL™ service, WGC estimates

Over the last few years, domestic gold production has risen as a result of an increasing number of gold projects developed by foreign companies that have come on stream. These companies entered China with the hope of becoming significant players in both the Chinese and international gold industry. We believe that the majority of the world's top 10 gold producers have a presence in China, either actively mining in the country, are involved in exploration or are seeking new investment opportunities.

Chart 74: Top gold producers' output (t) and their market share



Source: the BLOOMBERG PROFESSIONAL™ service, GFMS, Company data in 2008

Today, there are many foreign companies exploring and operating across China. Eldorado Gold, a Canadian gold producer, has been the largest international gold explorer and producer in China since the completion of its takeover of Sino Gold Mining Limited in December 2009. Eldorado currently operates the Tanjianshan mine in the Qinghai province. According to Eldorado, a feasibility study on its Eastern Dragon Project in China was completed in early 2009 and its first commercial gold production is anticipated in early 2011. The company also owns Jinfeng Mine and White Mountain through its acquisition of Sino Gold Mining. Other international companies that are involved in production in China include Griffin Mining and Central China Goldfields Plc.

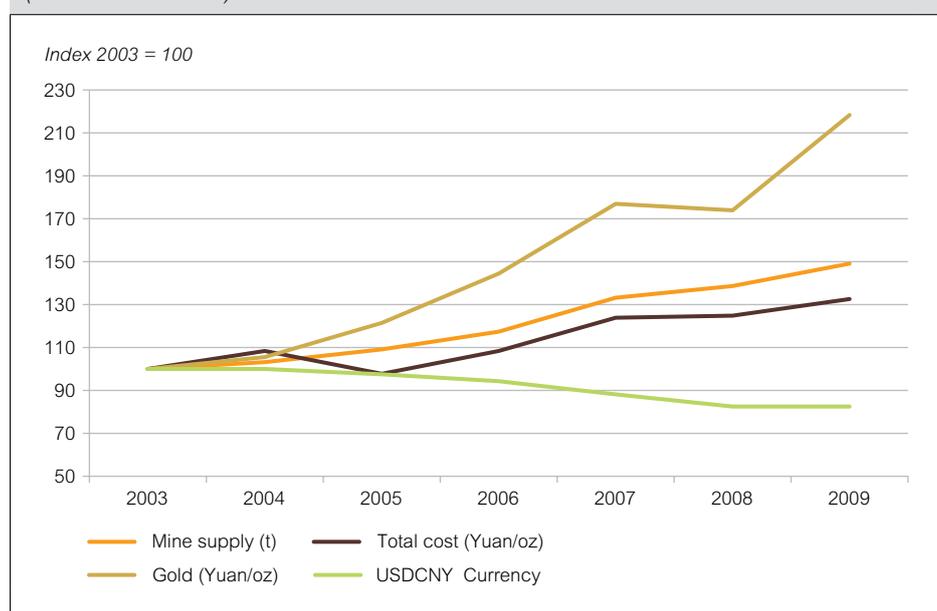
## Rising cost of production

During the period from 1998 to 2000, GFMS Limited found that as many as 1,200 gold mining operations in China were loss-making, with supply issues such as out-of-date mining equipment and poor technical execution compounding the problem. The subsequent rise in the gold price and higher production levels have helped local gold producers' margins to improve. Nonetheless, one of the major ongoing setbacks for Chinese mines is that, on an international basis, they are mainly small in size and are scattered around the vast country.

Ore grades vary enormously across different ore bodies around China. Generally, larger deposits make up less than half of the country's reserves, but the ore is on average low-medium grade, which pushes up the cost of developing domestic mines.

China's gold production costs rose over 30% between 2003 and 2009 as a result of low recovery grades and higher energy prices. However, these companies have been helped by the rising gold price in US dollar terms, which has increased significantly by more than the average total cost in China's gold mining industry during the same period.

Chart 75: Gold price, mine supply and total production costs in China versus USDCNY (indexed 2003 = 100)



Source: the BLOOMBERG PROFESSIONAL™ service, GFMS, Brook Hunt, WGC estimates

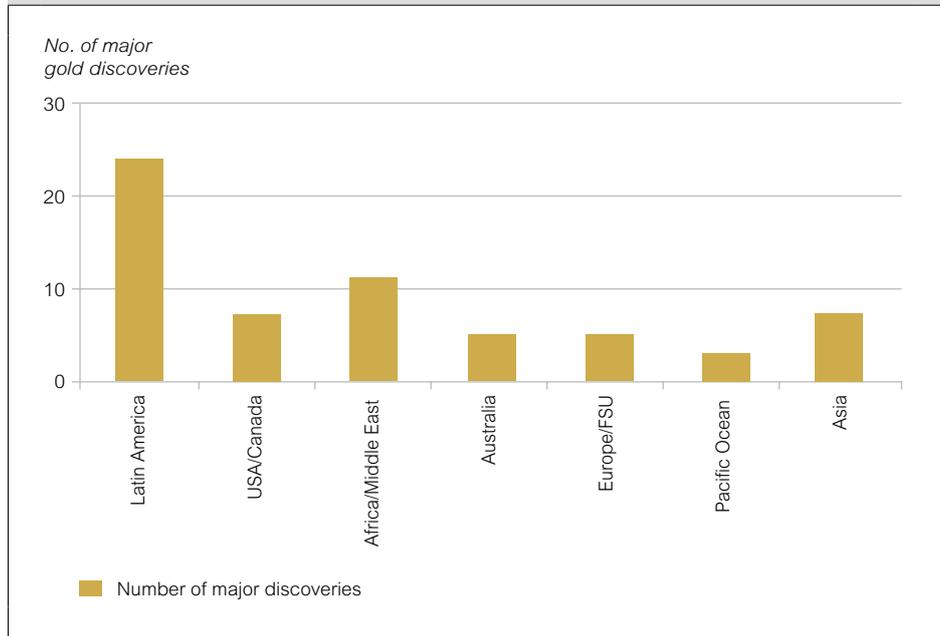
It is currently more attractive for China to produce gold rather than to import it, notably because the weak US dollar and strong Chinese Yuan offer production cost advantages. Hence we believe that China may continue to boost its domestic production, at least in the shorter-term, to feed the country's growing appetite for gold.

However, whilst the rising gold price is a positive for Chinese miners, the industry also faces challenges such as the high cost of developing new mines, rising input costs and potential threats relating to supply disruption, tougher safety regulations and depleting ore bodies.

### Mine supply growth – taking a closer look at reserves and resources

Metals Economic Group (MEG) estimates that over the past 10 years, 62 new major gold deposits were discovered worldwide, with seven in Asia.

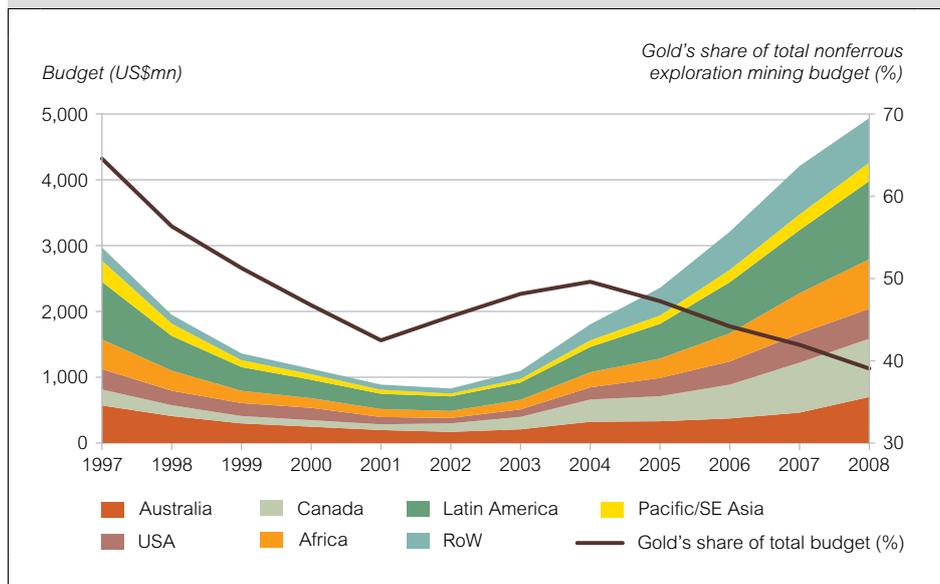
Chart 76: Major discoveries by region (1997-2008)



Source: Metals Economic Group; FSU stands for Former Soviet Union

The total world gold exploration budget reached a record high of \$4.9bn in 2008. However, MEG found that gold's share of the global nonferrous mining exploration budget has almost halved from 64.6% in 1997 to 39.1% in 2008. Several commodities (such as copper, iron ore and nickel) have outperformed gold during this period and made capital expenditure investment in these commodities far more attractive.

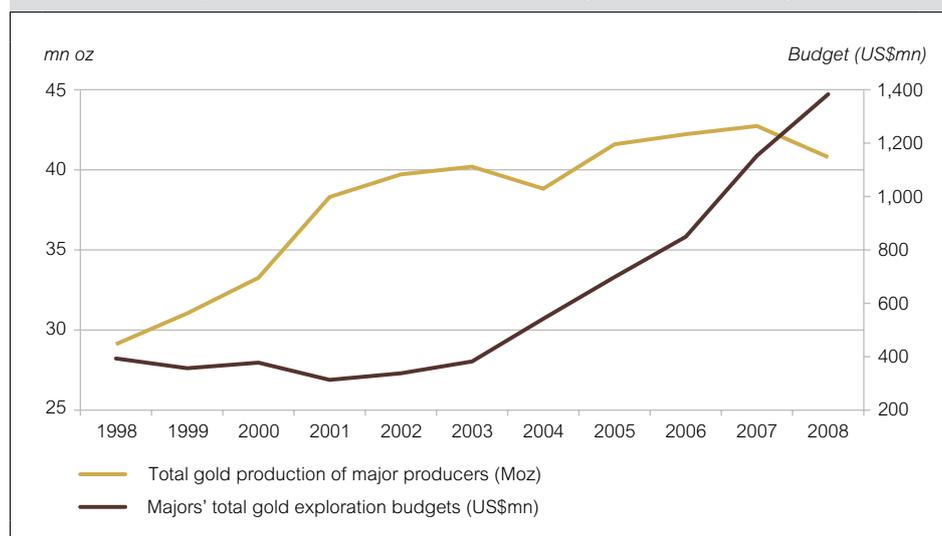
Chart 77: Annual gold exploration budgets by region (US\$m, LHS) vs. gold's share of total nonferrous exploration mining budget (%), RHS) between 1997-2008



Source: Metals Economic Group

MEG also estimates that whilst the total gold exploration budget has increased four-fold between 1998 and 2008 (US\$1.4bn), total gold production from the world's top 20 producers has risen by only 40% during this period, reaching 40.8mn oz in 2008.

Chart 78: Top 20\* gold producers' total production versus gold exploration budget



Note: \*Excludes China National due to insufficient data. Zijin Mining's statistics are estimates from 2000-2008 only.  
Source: Metals Economic Group

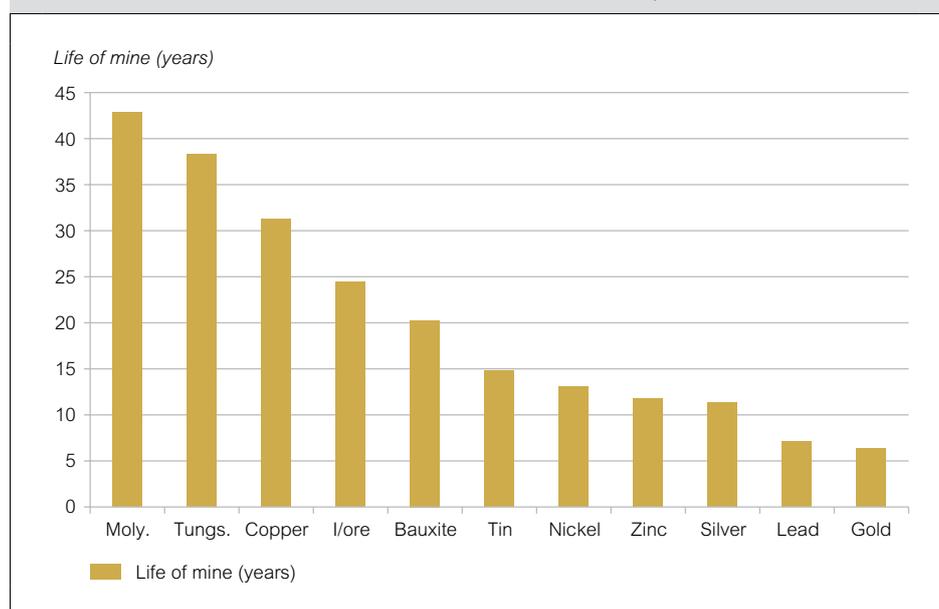
There is considerable uncertainty and controversy surrounding the reserves of gold present in China. In 2002, a joint report produced by the US Geological Survey and the Tianjin Geological Academy on sedimentary rock-hosted gold deposits in China, reported that there are more than 20mn oz of proven gold reserves in sedimentary rock-hosted gold deposits. Additional estimated and inferred resources are thought to be present in more than 160 deposits and occurrences that were undergoing exploration in 2002. The largest deposits discovered then in China were in Lannigou province (more than 3.2mn oz) and Baguamiao province (over 2.5mn oz). Other estimates from the Ministry of Land and Resource (MOLAR) found that the retained gold reserves of China were estimated to be approximately 4,000 tonnes at the end of 2000, 60% of which was rock gold, 12% gold dust and 28% associated gold.

The China Geological and Mineral Survey Bureau estimated the country's prospective gold resources at approximately 15,000 tonnes. The Chinese Geological Survey Bureau (CGS) reported that five major gold mines were discovered in China during 2007. These include four pure gold mines at Dachang (Qinghai province), Yangshan (Gansu), Sizhuang (Shandong), Baolun (Hainan) and a copper and gold mine at Gandise in Tibet's Autonomous Region. CGS projected that the five mines have a combined gold reserve of 600 tonnes, while prospects for further discoveries at these sites remain strong. In 2008, China's total gold resources were forecast to be between 15,000 and 20,000 tonnes, according to CGA<sup>25</sup>. CGA also stated that the Yangshan deposit in north Western China has resources of 308 metric tonnes and is the largest in the country.

<sup>25</sup>5th Shanghai Derivatives Market Forum in 2008; Bloomberg May 2008

China appears to have gold in some abundance as evidenced by the increase in output over recent years. However, China's future prospects for gold supply look to be limited, because its gold life reserves are limited when compared to reserves in other minerals such as molybdenum, tungsten, iron ore and copper. The exception is nickel as China has been able to increase its own nickel pig iron output by purchasing laterite-type nickel ore from nearby sources such as Papua New Guinea and the Philippines, especially after the collapse in the global nickel price.

Chart 79: Life of mine reserves for selected commodities at 2009 production levels in China



Note: Moly. = molybdenum, I/ore = iron ore and Tungs. = tungsten.

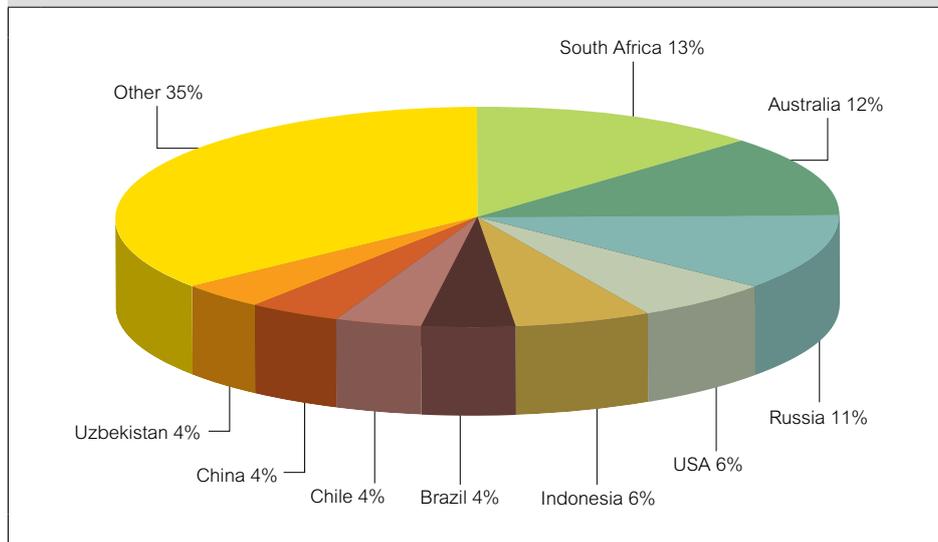
Source: WGC estimates based on US Geological Survey data, January 2010

According to CGA, the total number of gold producers in China has dropped by almost half, from over 1,200 in 2002 to approximately 700 in 2009. This is mainly attributable to shut downs and the integration of some small and obsolete gold producers around the country.

China is already the world's biggest producer and second largest consumer of gold but has only 4% of total world's reserves, with total basic reserves amounting to 1,900 tonnes, according to the US Geological Survey (USGS) in 2009<sup>26</sup>.

<sup>26</sup>US Geological Survey, Mineral Commodity Summaries Report, January 2010

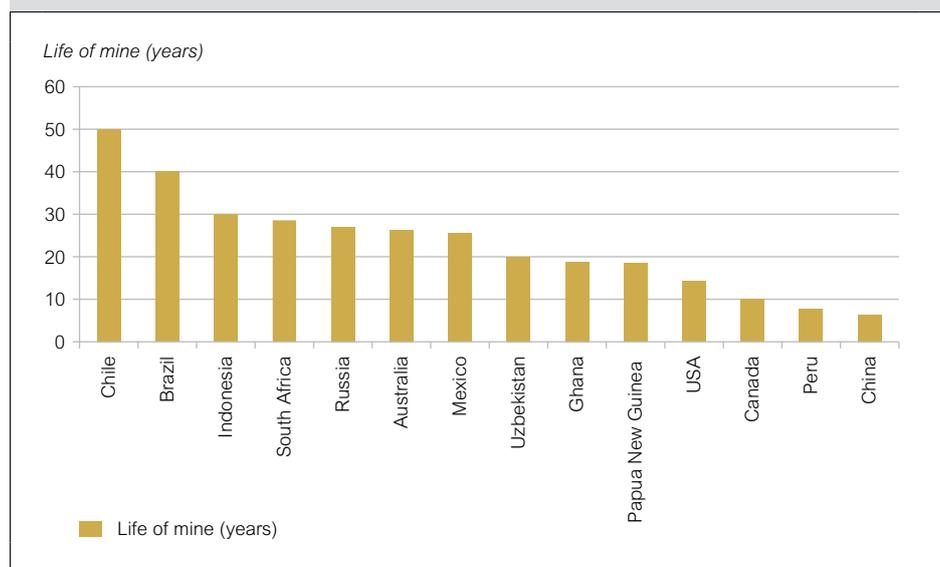
Chart 80: Breakdown of gold reserves by country (2009)



Source: US Geological Survey, January 2010

Assuming the 2009 USGS mine production and reserves figures are correct, China may exhaust existing gold mines in six years or less if Chinese demand continues to grow strongly. Current industry sentiment echoes this hypothesis: Zijin Mining Group, one of the leading gold producers in China, stated in a 2007 Bloomberg interview that China's existing gold mines will run out of ore in six years<sup>27</sup>. In contrast, other countries such as Indonesia, Russia, South Africa and Australia each sit on more than 20 years of the world's known gold reserves.

Chart 81: Life of gold mine reserves by country (2009)



Source: WGC estimates based on US Geological Survey data, January 2010

<sup>27</sup>Bloomberg, 6 December, 2007

After taking a closer look at the domestic supply and demand balance in the Chinese market, we expect supply growth to be challenging in the medium to long term and see a decline in future supply unless there is more funding directed to gold exploration.

In the government's white paper on China's Policy on Mineral Resources (December 2003), China stressed that it will rely on the exploitation of domestic mineral resources to guarantee the needs of its modernisation drive. However, the various statistics discussed above would suggest that China's gold resources are still relatively undiscovered, which could create new opportunities. According to G-Resources Group Limited's 2009 presentation, Asia attracts only 4% of global exploration expenditure<sup>28</sup>. Hence further work would be required to examine China's standard gold reserves and resources, as well as defining its full exploration potential.

Gold mining is, however, an extremely lengthy process, taking five to eight years from prospecting to production. It can also take years to re-open a closed mine. Such long lead times mean production cannot easily respond to exploit a rising gold price.

Any potential supply constraint may lead to mergers and acquisitions, as China will have to look for deals to grow its gold resources and reserves. In 2008, Ernst & Young found that most Chinese mining companies were financially strong, reflecting high turnover levels in recent years, as well as successful fund raising efforts<sup>29</sup>. These Chinese mining companies are also set to benefit from a strong Yuan, making foreign mining and metals assets even cheaper for a Chinese buyer.

Through the economic downturn, announcements started to emerge from local companies seeking to buy gold assets overseas as assets abroad became cheaper. In November 2007, Zijin Mining acquired a 20% interest in a Philippine gold project from Lepanto Consolidated Mining Co, having paid US\$55.1mn for a controlling stake in JV Zeravshan LLC, Tajikistan's biggest gold producer. Zhaojin Mining Industry Co has also been looking to invest outside of China. According to an interview with Bloomberg, Zhaojin said the company had examined several projects in countries such as the Philippines and Burma<sup>30</sup>. In October 2009, Minmetals Corporation, the Chinese state-owned metals trader, said it is looking to acquire gold mines in Australia and Canada<sup>31</sup>.

Assuming a long term gold supply growth of 5%, which is in line with the target set out in the Eleventh Five Year Plan, we believe the Chinese gold market could most likely continue to be in disequilibrium. WGC believes that the limited size of gold reserves and resource forecasts may restrict new supply unless there is further investment in exploration in China's gold industry, especially if existing domestic production lags behind current demand.

<sup>28</sup>Gold: *The Perfect Metal, Golden Era – Growing Potential Investment Forum Hong Kong*, 2009

<sup>29</sup>Ernst & Young, *The year when cash is king*, 2008

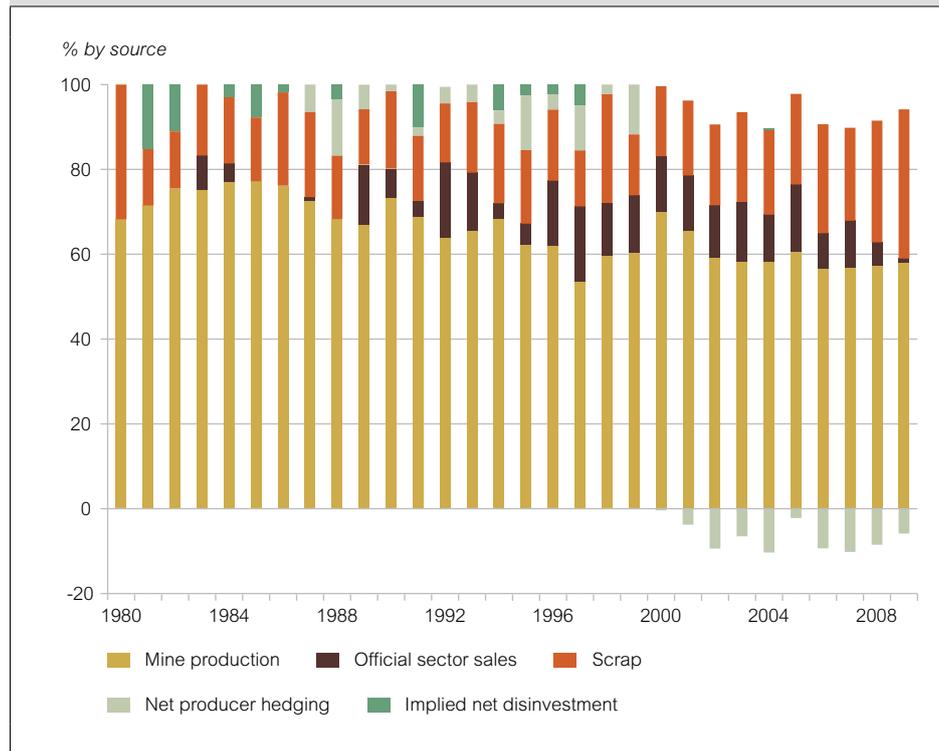
<sup>30</sup>Bloomberg, 6 December 2007

<sup>31</sup>Reuters, 22 October 2009

## Recycled gold

Recycled gold could threaten the gold supply demand dynamics in China because flows have been playing a more significant role in the gold supply market.

Chart 82: Global gold supply by source (%)



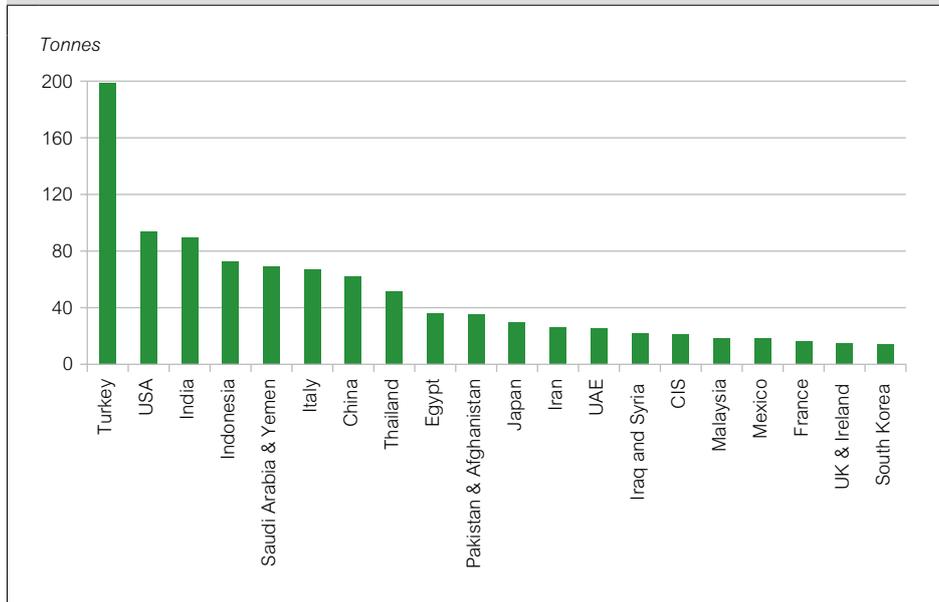
Source: GFMS, WGC, CGA

Recycling is the most volatile part of supply, but in many ways it acts as a natural market stabiliser. Recycling activity tends to increase sharply when the price spikes up, releasing supply into the market. In the first quarter of 2009, global gold supply spiked sharply as a result of higher contribution from recycling levels. However, recycling flows reduced significantly in the remaining quarters of the year, despite the higher gold price environment<sup>32</sup>.

Turkey has been the largest global supplier of recycled gold, contributing 199 tonnes or 16% of the total in 2008. China ranks seventh, with the flow of recycled gold up 57% year-on-year to 62 tonnes in 2008. This amounts to around 5% of the global supply of recycled gold.

<sup>32</sup>WGC, Gold Demand Trends, Q409 and Full year 2009, February 2010

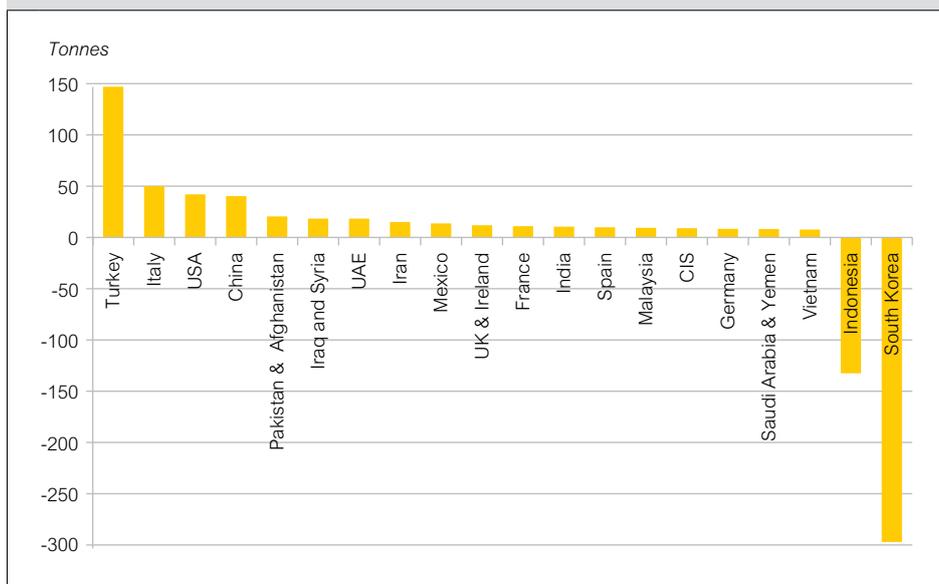
Chart 83: Top recycled gold supplier in tonnes (2008)



Source: GFMS, WGC

During the ten year period from 1998 to 2008, China's supply of recycled gold rose by 40 tonnes. This, together with Turkey's increase of 147 tonnes, was more than offset by the combined fall in recycled gold supply coming from Indonesia and South Korea.

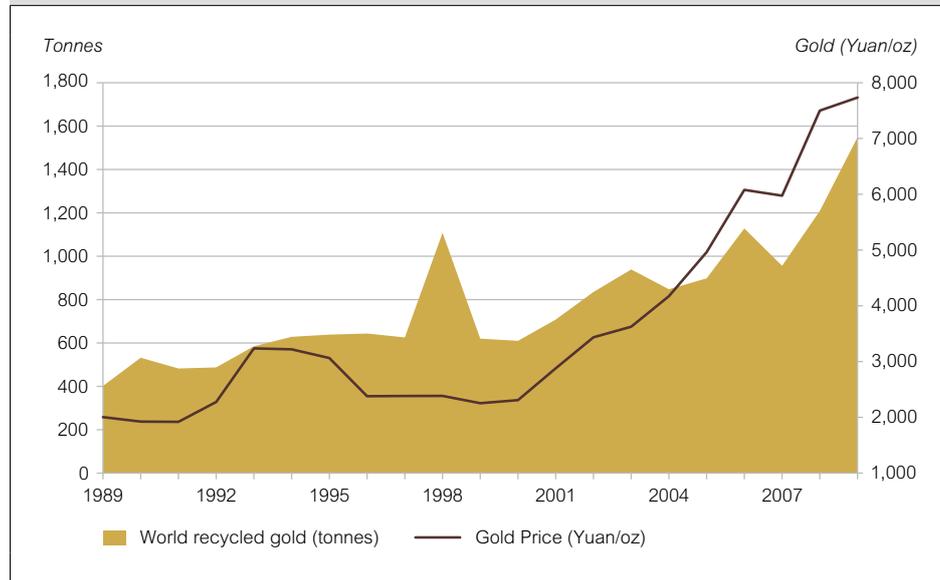
Chart 84: Recycled gold supply movement in tonnes (1998-2008)



Source: GFMS, WGC

Historically, the jump in recycling flows has been spurred on by a combination of a higher gold price and distressed selling, particularly in the record highs of late 2008 and early 2009. The Asian currency crisis of the late 1990s also triggered a sharp jump. The graph below shows that, since 1989, there has been a strong relationship between the flow of recycled gold coming into the market and the gold price in local currency terms. An exception, in the post deregulation period, occurred in 2007 when Chinese recycling volumes fell by 11% year-on-year to 20 tonnes. We believe the Chinese consumers are not responding to a higher gold price and selling scrap gold because they are catching up to their foreign counterparts in terms of gold ownership levels. This is also reflected in a 23% year-on-year rise in total Chinese jewellery consumption during that year.

Chart 85: Global recycled gold supply (t) and gold (Yuan/oz)



Source: GFMS, the BLOOMBERG PROFESSIONAL™ service, WGC

WGC believes that Chinese consumers are in the process of accumulating gold, which suggests that they are – and will be – less willing to sell back their holdings in response to higher gold prices. Conversely, consumers in other countries are responding to high prices by selling gold items.

## The long-term outlook for the Chinese gold market

The long-term outlook for the Chinese gold market remains positive. At present, the market continues to be in disequilibrium since the deregulation of the domestic gold industry. Chinese consumers are catching up relative to the Western world in terms of gold ownership. This is because market liberalisation tends to have a dramatic impact in a local market. In India, for example its gold consumption more than doubled from roughly 300-350 tonnes in the early 1990s to over 700 tonnes at the end of 2008 when the liberalisation process was in full swing.

Chinese gold demand has increased by 106% from 2002 to an estimated 443 tonnes in 2009, or an average of 8% per annum during the same period. Nevertheless, the country has one of the lowest gold consumption intensity rates compared to Western economies, and to countries with similar gold cultures. In 2009, per capita gold consumption in China was 0.33gm, up from 0.17gm in 2002. WGC estimates that total incremental demand based on 2009 consumption and IMF population forecasts, ranges from 1,000 tonnes at USA and Japanese per capita consumption levels to more, if Chinese consumption per capita were to rise to Taiwanese levels.

Over time, we believe there is also a significant potential for growth in Chinese gold jewellery demand, which represents the vast majority (78%) of the domestic gold market. According to WGC analysis of the Chinese jewellery market, we found per capita consumption of 0.26gm in 2009 to be low. If gold jewellery were consumed in China at the same rate per capita as in India, Hong Kong or Saudi Arabia, annual Chinese demand could increase by at least 100 tonnes to as much as 4,000 tonnes in the jewellery sector alone.

Net retail gold investment is still developing in China. Investors looking to protect their wealth, and institutional and retail investors looking to manage portfolio risk are increasingly turning to gold.

PBoC is also playing an increasingly supportive role on the demand side. We believe the reasons why central banks such as the PBoC would want to own gold are the same as the reasons why investors would want to own gold – namely its diversification properties, insurance against unexpected events and gold's ability to outperform during crises. To recap our earlier analysis, if PBoC decides to rebalance its books back to its recent peak gold holding ratio of 2.2% at Q4 2002, we estimate that the incremental demand would amount to a further 400 tonnes at the current gold price. The ratio is nevertheless a fraction of the other key economies such as the USA (70.4%) and Germany (66.1%).

In the past, Chinese mine production has been driven by gold prices. However, despite the sharp rally that we have seen in the gold price and a 63% jump in mine production since 2001, the Chinese gold industry is simply not responding fast enough to bring in new supply. During the period from 2006 to 2009, average annual gold mine output grew by 8% per annum in China. This is more than the

targeted growth rate of 5% set out in its Eleventh Five-Year Plan (2006-2010) and it is more than three years since China moved three of its larger gold mines into production.

On a longer term basis, supply issues such as higher mine development costs, rising input costs and potential threats relating to supply disruption, tougher safety regulations and depleting ore bodies could put a much higher floor under the gold price than was previously the case.

Chinese gold demand has the potential to double from today's levels within a decade. Assuming that long term gold demand growth is in line with the supply growth target of 5% per annum (as set out in the Eleventh Five Year Plan), China could experience strong demand for decades to come. Demand growth looks set to continue to outpace global and domestic production capacity. The limited range of gold reserves and resources forecasts may restrict new supply, especially if existing domestic production lags behind demand. This shortfall creates a "snowball" effect as China's gold industry may not be able to catch up with the annual leap in domestic consumption. This would effectively extend the gold cycle in China.

## Conclusion

Over the past few years, China has experienced economic prosperity and rapidly increasing wealth. The Chinese economy grew at an unexpectedly high growth rate of 8.7% in 2009, with GDP reaching 10.7% in the last quarter. The country also saw rapid growth in foreign direct investment, fixed asset investment, new loans and rising money supply. During the same period, the Western world faced deep recession and is only now beginning to recover.

Continuous improvements in living standards, higher savings rates amongst private individuals and rising income levels are expected to generate robust gold demand in China. The World Bank (WB) recently raised its China GDP growth forecast for 2010 from 9.0% to 9.5%<sup>33</sup>. WB said that Chinese trade and household consumption should continue to grow strongly as the stimulus is withdrawn. The ongoing structural shift in Chinese gold demand and supply, as well as the structural trends within the world's second largest gold market potentially creates a brave new world for China's gold industry. Today China has an insatiable appetite for gold which looks likely to continue in an environment where domestic mine supply lags behind demand.

Looking further ahead, WGC expects Chinese gold demand to double from today's levels over the next decade. Jewellery and investment growth are expected to be the chief drivers of this demand. The motives that drive demand in those sectors can differ: Jewellery is cyclical, and investment demand has both a cyclical and counter-cyclical element to it.

There is a strong growth opportunity in the gold jewellery market given the very low per capita consumption of gold jewellery in China, which has almost doubled since the deregulation of the market. The recent financial crisis has also increased caution in Asia and made Asian investors aware of the need for a hedge against the possibility of further weakening in the US dollar, to which they are heavily exposed. Gold's dollar hedging properties make it both appropriate and ideal for this purpose.

There has recently been much talk of impending inflationary fears in China. According to China's Premier Wen Jiabao, inflation will be a key challenge as the country tries to keep its recovery on track<sup>34</sup>. In February 2010, China's inflation rose 2.7%, which is close to the government's official cap of 3.0% for 2010. In addition, WB also warned about asset bubbles in real estate and the prospect of inflationary pressures in China. Whether inflation appears next year or the year after that, we believe it is likely that the recovery of major economies could go from one extreme to another. Global financial systems are still relatively unstable and it will be very difficult for central banks to manage their way out recession without inflation becoming an issue. Since the latter part of 2008, the monetary and fiscal stimuli injected by governments and central banks around

<sup>33</sup>Associated Press (16 March 2010)

<sup>34</sup>The Telegraph (17 March 2010)

the globe have been sizable. Historically, gold has proved itself as an effective hedge against inflation over the longer term and it tends to outperform the market during periods of extreme inflation.

China has also recently confirmed its economic growth target of 8.0% for 2010 but Premier Wen has cautioned that the country “will still face a complicated situation, both at home and abroad” and is trying to maintain a balance between the economic growth required to create employment for its 1.3bn people and avoiding overheating its economy<sup>35</sup>. Time will tell how China will evolve, as the nation faces multiple challenges in the wake of the global financial crisis. With ongoing uncertainties surrounding the economic recovery, currency and inflation, the search for alternative international asset choices for both investors and the central bank should, in our view and for the reasons outlined in this report, clearly involve consideration of gold. Investors may be mindful that the volatility that we have seen in the past two years is not necessarily an isolated event and we may have to prepare for a more protracted recovery than in past cycles.

The real value of gold for investors lies in the reliable diversification it provides and its low correlation with other assets. This reflects the unique and diverse drivers of gold demand and supply. Gold also consistently delivers a lower average volatility than most mainstream assets and commodities.

Gold can be seen as an insurance policy. Gold is an effective hedge and gives investors the confidence to manage unknown risk. Its value holds in good times and bad. Gold is one of only a few assets that have the ability to show resilience during extreme conditions.

Gold as an asset class has performed impressively for nearly a decade, both in China and internationally. Today, the combination of a healthy outlook for gold demand and its relatively inelastic supply creates a bright future for gold, and one which China is well placed to capitalise on.

<sup>35</sup>Reuters (13 February 2010)





A close-up photograph of gold bars. In the foreground, a circular stamp is visible on a gold bar, featuring the text 'WORLD GOLD COUNCIL' and 'LONDON' around a central emblem. The background shows more gold bars, slightly out of focus, creating a sense of depth and abundance of gold.

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