

# Investment

London PM fix US\$1599 ▲

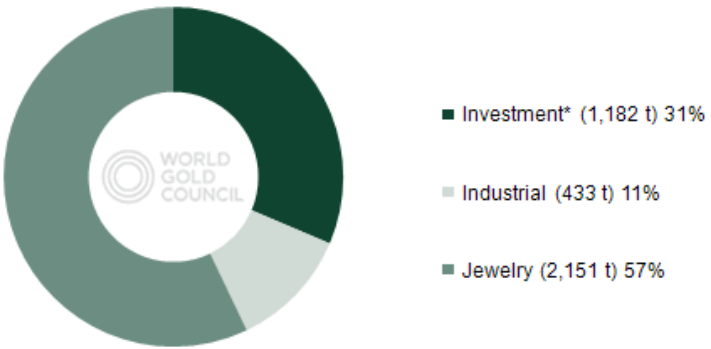
ETF (AUM) US\$79,757m ▼

## Demand and supply

- Gold - The supply side 📄

The demand and supply dynamics of the gold market underpins the precious metal's extensive appeal and functionality, including its characteristics as an investment vehicle.

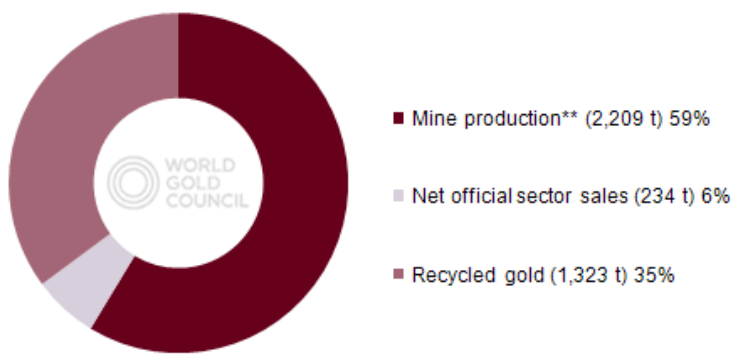
### Demand flows, 5-year average (Q4'05 to Q3'10)



Source: GFMS, WGC  
\* Includes identifiable and non-identifiable investment

[Demand flows, 5-year average \(Q4'05 to Q3'10\) - click to enlarge](#)

### Supply flows, 5-year average (Q4'05 to Q3'10)

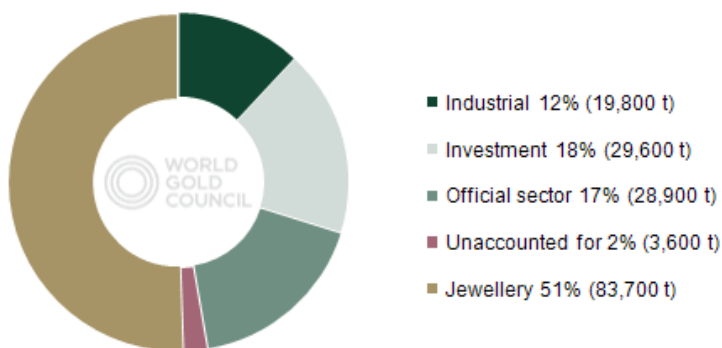


Source: GFMS, WGC  
\*\* Net of producer hedging

[Supply flows, 5-year average \(Q4'05 to Q3'10\) - click to enlarge](#)

### Also in this section

- Why invest ▼
  - Portfolio diversification
  - Inflation hedge
  - Currency hedge
  - Risk management
  - Demand and supply
  - Gold for pension funds
- How to invest >
- Where to invest >
- FAQs >
- Glossary >

**Above-ground stocks, end 2009 (total: 165,600 tonnes)**

Source: GFMS

Above-ground stocks, end 2009 (total: 165,600 tonnes) - [click to enlarge](#)

## Demand

Demand for gold is widely dispersed around the world. East Asia, the Indian sub-continent and the Middle East accounted for approximately 70% of world demand in 2009. India, Greater China (China and Hong Kong), US, Turkey and Saudi Arabia represented over half of world demand. A different set of socio-economic and cultural incentives drives each market, creating a diverse range of factors influencing demand. Rapid demographic and other socio-economic changes in many of the key consuming nations are also likely to produce new patterns of demand in the foreseeable future.

Read more in our detailed briefing note about [Gold Demand Trends](#) , which also includes commentary on supply.

## Jewellery demand

Jewellery consistently accounts for over two-thirds of gold demand. In the 12 months to December 2009, appetite for jewellery amounted to around US\$55 billion, making it one of the world's largest categories of consumer goods. India is the largest consumer in volume terms, accounting for 27% of demand in 2009. Indian gold demand is supported by cultural and religious traditions which are not directly linked to global economic trends. Find out more in our special reports [The role of gold in India](#)  and [India Gold Report - India: Heart of Gold - Revival](#) .

The 2007-2009 financial crisis had a significant negative impact on consumer spending. This has resulted in the reduced volume of jewellery sales, particularly in western markets, with the United States being hardest hit. However, jewellery demand in India and Asia has since been recovering whilst in China growth in jewellery consumption has been continuous.

Jewellery demand is driven by a combination of affordability and desirability by consumers. It rises during periods of price stability or gradually rising prices, and then declines in periods of price volatility. A steadily rising price reinforces the inherent value of gold jewellery, an intrinsic part of its desirability. Several countries, including China and India, offer clear and considerable potential for future growth.

## Investment demand

A significant portion of investment demand is transacted in the over-the-counter market, therefore not easily measurable. However, there's no doubt that investment demand in gold has increased considerably in recent years. **Since 2003, investment has represented the strongest source of growth in demand. The last five years to the end of 2009 saw an increase in value terms of around 119%. In 2009 alone, investment attracted net inflows of approximately US\$41bn.**

Numerous factors motivate people and institutions to seek gold investments. The positive price outlook is underpinned by expectations that growth in demand will continue to outstrip that of supply. Of the key drivers behind investor demand, one

common thread emerges: all are rooted in gold's abilities to insure against instability and protect against [risk](#).

Gold investment can take many forms. Some investors choose to combine two or more of these different forms for flexibility.

The distinction between buying physical gold and gaining exposure to movements in the gold price is not always clear. This is especially true since it is possible to invest in bullion without actually taking physical delivery.

The growth in investment demand has sparked numerous innovations in gold investment, ranging from online bullion sales to gold ETFs. There are now a wide variety of investment products to suit both the private and institutional investor. Read more about [how to invest](#).

## Technological demand

**Industrial, medical and dental technology accounts for around 12% of gold demand (an annual average of over 434 tonnes from 2005 to 2009).**

Gold offers high thermal and electrical conductivity, along with outstanding resistance to corrosion. This explains why over half of all industrial demand arises from its use in electrical components.

Gold's use in medical applications has a long history, reaching back to ancient Egypt. Today, various biomedical applications make use of its numerous attributes, including bio-compatibility as well as resistance to bacterial colonization and corrosion.

Recent research has uncovered a number of new practical uses for gold, including its function as a catalyst in fuel cells, as well as chemical processing and pollution control. The potential to use nanoparticles of gold in advanced electronics, glazing coatings, and cancer treatments offers promising new areas of scientific research.

Find out more about the [technological applications of gold](#).

Read the latest on the industrial markets and growing [uses for gold](#).

## Supply

### Mine production

Gold is produced from mines on every continent except Antarctica, where mining is prohibited. There are several hundred gold mines operating worldwide ranging in scale from minor to enormous. This figure doesn't include mining at the very small-scale, artisanal and often 'unofficial' level.

Today, the overall level of global mine production is relatively stable. Supply has **averaged approximately 2,497 tonnes per year over the last several years**. The stability of production comes from the fact that when new mines are developed, they're mostly serving to replace current production, rather than expanding global production levels.

Gold production does experience comparatively long lead times, with new mines taking up to 10 years to come on stream. That means mining output is relatively inelastic, unable to respond quickly to a change in price outlook. Even a sustained price rally, as experienced by gold over the last seven years, doesn't translate easily into increased production.

### Recycled gold

While gold mine production is relatively inelastic, recycled gold ensures there is a potential source of easily traded supply when needed. This helps to cater for an increase in demand and keep the gold price stable. The high value of gold makes recovery economically viable, as long as the precious metal is in a form that's capable of being extracted, melted down, re-refined and reused. **Between 2005 and 2009, recycled gold contributed an average 32% to annual supply flows.**

## Central banks

### 1) Central banks

Central banks and multinational organisations (such as the International Monetary

Fund) currently hold just under one-fifth of global above-ground stocks of gold as reserve assets (amounting to around 30,500 tonnes, dispersed across 110 organisations). On average, governments hold around 10% of their official reserves as gold, although the proportion varies country-by-country.

While the sector as a whole has typically been a net seller since 1989, there has been a seismic shift in central bank attitudes toward gold. For two decades, the official sector was a net seller of a substantial quantity of gold to the private sector markets around the world. That period came to an end during 2009. As a legacy of the gold standard, the advanced economies in Western Europe and North America hold on average over 50% of their external reserves in gold. The appetite for sales among these countries has dwindled away to practically zero. Emerging market countries typically hold less than 10% of their reserves in gold, but their economies are growing very rapidly; increasingly these countries are being identified as buyers of significant quantities of gold for their reserves. Since 1999, the bulk of sales from central banks have been regulated by the [Central Bank Gold Agreement/CBGAs](#) which have stabilised sales from 15 of the world's biggest holders of gold. Significantly, gold sales from official sector sources have been diminishing in recent years. **Net central bank sales amounted to just 41 tonnes in 2009.**

For more on [Central Bank gold holdings](#).

For quarterly [Reserve Asset statistics](#).

## Gold production

The process of producing gold can be divided into six main phases:

- finding the ore body
- creating access to the ore body
- removing the ore by mining or breaking the ore body
- transporting the mined material from the mining face to the plants for treatment
- processing
- refining

This basic process applies to both underground and surface operations.

The world's principal gold refineries are based near major mining centres or precious metals processing centres worldwide. In terms of capacity, the largest is the Rand Refinery in Germiston, South Africa. On the basis of output, the largest is the Johnson Matthey refinery in Salt Lake City, US.

Rather than buying gold and then selling it onto the market later, the refiner typically takes a fee from the miner.

Once refined, the bullion bars (with a purity of 99.5% or higher) are sold to bullion dealers. These dealers then trade with jewellery or electronics manufacturers or investors. Avoiding large bilateral contracts between miner and fabricator, this dealer-based bullion market lies at the heart of the supply-demand cycle. It facilitates free flow of the precious metal, and underpins the free market for gold.

You can visit the [Gold Bars Worldwide](#) website for a wealth of information on the international gold bar market.