

The Fascination of Gold

By Irma Götz and Christa Kaps, © MoneyMuseum

For thousands of years gold has strongly appealed to mankind because of its manifold attractive properties and its rarity. Here we present some facts and figures on this fascinating precious metal. (Graphics by Gío Löwe, Berlin)

How heavy is gold?



Which is heavier – lead, iron or gold? We tend to think that lead is very heavy and so it is perhaps surprising that gold is more than one and a half times heavier than lead – and even two and a half times heavier than iron. The reason for this is the high density of gold (19.3 grams per cubic centimetre). One kilogram of gold therefore fits into a cube whose edges are only 3.7 centimetres long.

How elastic is gold?



With one kilogram of gold Zurich could be connected with Cairo as the crow flies, because one kilogram of gold could be pulled out into a gold thread about 3,000 kilometres long and with a diameter of 0.006 millimetres. This wire would then be ten times finer than a human hair. Besides that, gold can be hammered out into a wafer-thin gold leaf 0.0001 millimetres thick, so that one gram of it – depending on the thickness and the alloy – is sufficient to gild about 3.4 to 8.5 square metres. Its great malleability and elasticity thus make gold the ideal material for goldsmiths and gilders.

How much gold is there?



The most reliable estimate of the worldwide output of gold hitherto according to the World Gold Council amounted to about 165,000 tonnes at the end of 2009 – that is equal to a massive gold cube whose edges are roughly 21 metres long.

The largest stock of gold is located in the cellar of the US Central Bank in Manhattan, New York. According to the situation in 2009, 550,000 bars (6,875 tons) of gold are kept for 60 states. Throughout the world some 30,000 tons of gold are stored in banks. Together this is just under a quarter of the entire quantity of gold produced so far. Over half of all gold is in millions of chains, rings and bracelets.

Who owns the most gold?



According to the list of the official stocks published by the World Gold Council in March 2010, at the end of 2009 the USA possessed by far the most gold, followed by Germany with 3,407 tons and the IMF (International Monetary Fund) with 3,005 tons. Italy comes fourth with 2,452 tons, followed by France with 2,435 tons. Switzerland with its 1,040 tons is the seventh largest owner of gold.

It is interesting that the four largest owners of gold together possess only a little more than 10 percent of the entire amount of gold in the world. More than one and a half of this quantity of gold is in private hands. Of this roughly 15,000 tons in India, a considerable part of which has been worked into golden threads.

Who has the largest gold reserves per head of the population?



Although the Swiss National Bank sold 145 tons of gold in the last ten years, thus more than halving its gold reserves, Switzerland possesses by far the most gold per head of the population. According to the latest figures based on the list of the World Gold Council for March 2010 this is some 134 grams, followed by Lebanon with 72 grams and Germany with 42 grams. Italy comes fourth with 41 grams, followed by France and Holland with 37 grams. The USA ranks ninth with 27 grams. Russia and China have very little gold, namely 3.50 and 0.45 grams respectively. That is why these two countries have for some time been trying to step up their gold reserves.

If the available quantity of gold were distributed over the entire world population everyone would receive about 24 grams.

Who produces the most gold?



If the quantities of gold mined by the twelve largest producers in the world – according to the data of the US Geological Survey (USGS) of January 2009 – were added together they would amount to roughly 77 percent of the gold mined worldwide with about 1,806 tons. China produced the most, namely 295 tons. It was followed by South Africa with 250 tons, the USA with 230 tons and Australia with 225 tons. Gold production has had the highest increase in Peru, which came fifth with 175 tons, and in Russia, which defended its sixth place with 165 tons.

South Africa, for 102 years the biggest gold producer worldwide, was already ousted from its top position by China in 2007. The reason for this is the rising energy prices, which forced South Africa to slow down its gold output.

Who uses the largest quantities of gold?



According to GFMS, the leading British precious metals advisers and researchers, some 51 percent of the entire available quantity of gold was bought by the jewellery industry in 2008, (other sources estimate that up to 70 percent was used for this purpose), 18 percent stored by central banks, 17 percent invested privately in bars and coins and 12 percent used by industry (mainly by the electronic industry and dentistry).

Where are the largest gold reserves in the ground?



According to the data of the US Geological Survey (USGS) of January 2009, South Africa had at its disposal the largest gold reserves with an estimated 6,000 tons in 2008, closely followed by Australia and Russia with roughly 5,000 tons each as well as the USA and Indonesia with 3,000 tons each. Brazil and Canada ranked fourth with about 3,000 tons each.

With these reserves the gold deposits are meant that are still in the ground and can be profitably mined with the currently available technical possibilities. Altogether it was reckoned that there were reserves of about 47,000 tons in 2008. That means that with an annual output of about 2,330 tons gold can be mined for roughly another 20 years.

The largest gold reserves would, by the way, be the salt water in the oceans. They contain gold in a minute concentration as a chloride complex. The yield of 0.004 milligrams of gold per ton of seawater is, however, not sufficient for profitable exploitation.

How much is all the gold in the world worth?



The entire amount of gold mined up to now of about 165,000 tons is equivalent to a current market value of some 6,508 billion US dollars on the basis of calculations of the average price of 1226.63 dollars per ounce, which the London Bullion Market Association, which has been fixing the world market price for gold twice a day since 1919, reports for the 14th June 2010. But this horrendous sum as well as the value of the money currently in circulation is by no means any longer covered by the stocks of gold.