

The Value of Gold to Society

Gold has been highly valued for thousands of years and is as popular now as it has ever been; as jewellery, as a financial asset and as an industrial product. However the social value that the gold industry adds to societies around the world, especially in poorer countries, is less understood and often misrepresented.

Gold mining's value to developing countries

Gold mining is vital to the fragile economies of many impoverished countries, which account for roughly two-thirds of global gold production. In addition to generating export revenue in these countries, gold production provides royalty and tax income to their governments, technology transfer, worker training and the creation of a skilled workforce. Gold mining can also bring substantial improvements in physical, social, legal and financial infrastructure. In many of these countries, gold mining is a foundation industry that often provides the critical mass for the development of electricity, water, road and rail transport in a region, that are the essential foundations of an economy.

Developing countries accounted for 72% of global output in 2004. Most of this came from low-income or lower-middle-income countries that together accounted for two thirds of global output.

The strongest rise in output has been seen in Heavily Indebted Poor Countries (HIPCs), whose gold production rose by 84% between 1994 and 2004. Of the 38 HIPC countries, 14 are significant gold producers with lesser or minor production in at least another 14 countries. There is potential for substantial additional production in several other countries.

The rise in HIPCs' output has been paralleled by rising export dependence on gold. In 2003, gold accounted for 13% of goods (merchandise) exports of the 14 significant producers and 10% of their exports of goods and services. For HIPCs as a group, gold accounted for nearly 8% of goods exports and over 6% of exports of goods and services. It is one of the most important exports for HIPCs.

Gold is the leading export for Mali (59% of goods exports in 2003), Tanzania (44%), Ghana (32%), Guyana (26%) and the second most important for Guinea (23%). A \$10 fall in the gold price would cause a loss of around \$75m in HIPCs' export income.

For the 27 HIPC countries that have reached decision or completion point (those that receive at least some debt relief under the HIPC initiative), gold exports in 2003 amounted to 87% of debt service payments.

Gold is equally important to other low-income countries that are not HIPCs. Among those considered by the World Bank to be severely or moderately indebted, gold is the leading export for Kyrgyzstan (around 45% of total goods exports in 2003) and Papua New Guinea (36%), the second most important export for Mongolia (20%) and Zimbabwe (11%) and one of the two leading exports for Uzbekistan. Among lower-middle-income countries, gold is the leading export for both South Africa (13% of goods exports in 2003) and Peru (17%).

Gold mining companies source supplies locally where possible and employ local labour where possible. Thus, even allowing for some necessary imports and for the remittance

of profits and dividends, their impact on a developing country's balance of payments is strongly positive. Gold mining, and metals mining generally, is essentially free of the distorting subsidies applied by some developed countries to agricultural production.

Export revenue is not the only benefit gold mining brings to a developing country. It provides royalty and tax income to governments, technology transfer, skilled employment and training for local populations, together with further jobs through the multiplier effect. In one or two cases it has provided the foundation for a significant jewellery manufacturing industry.

Gold mining can also bring substantial improvements in physical, social, legal and financial infrastructure. The establishment of a formal mining industry can be the first step in a country's industrial development. Mining is a foundation industry that often provides the critical mass for the development of electricity, water, road and rail transport in a region. This characteristic of the industry is particularly important in Africa where lack of infrastructure has been identified as one of the major hindrances to economic development.

Gold is often thought of as synonymous with wealth. Yet gold coins, bars and high-carat jewellery play a crucial role as a means of saving and defence against misfortune to many of the poor of the world. Similarly gold mining brings benefits to poorer nations. It will continue to have a role to play in fostering economic development.

Gold's value to consumers and investors in developing countries

In much of Asia, the Middle East, and the Indian subcontinent, gold is the best possible protection against upheaval, both political and economic. For men and women throughout the developing world, gold is still one of the most liquid and widely accepted forms of exchange, quite simply the most efficient store of value they possess. Around two thirds of the jewellery purchased in the Middle East and Asia is used as a means of saving in addition to its function as an adornment. The use of jewellery as savings is often important in rural areas where access to a reliable and appropriate banking system is difficult or impossible. Gold also offers protection against a weak currency or high domestic inflation levels, which are prevalent and persistent problems in the developing world.

Around two thirds of all jewellery manufacture takes place in the developing world and the proportion is rising. Countries such as Turkey, India, China and Thailand have all seen their exports to developed countries rise in the last few years, generating export earnings and employment. Gold jewellery sales to tourists are also important for Turkey, Egypt and Dubai.

While inflation has essentially been non-existent until recently in most developed countries, in many developing countries, inflation and the attendant currency depreciation have been rampant, causing hardship to millions, if not billions, of people. The US dollar price of gold did not perform well for 20 years from 1980 to 2000, but gold was an excellent investment in terms of, for example, the Indian rupee, the Turkish lire, or the Vietnamese dong. Where men and women do not have easy access to liquid markets in company stock or government bonds, to US dollar bank accounts, or even any bank account at all, gold has proved over and over again to be the most valuable financial asset to own.

For example, in Vietnam, gold plays an important role in the purchase of a home. Buying a home in Vietnam takes time, as is the case in most countries. From the moment a buyer and seller agree on a price to the day the paperwork and sale are completed takes a month or longer. During this time, the value of the Vietnamese currency may have fallen sharply, as the current rate of currency depreciation in that country is very rapid. Accordingly, the buyer will arrange financing with a bank not in terms of the Vietnamese dong, but in gold, which holds its value in terms of purchasing power. This arrangement means the buyer will still have enough to pay the agreed price when the sale is consummated.

Gold's value to women living in developing countries

In the Middle East and the Indian sub-continent gold plays an important role in the financial security of women. Historically, jewellery was often the only asset a Muslim or Hindu woman could own in practice, and in more traditional families this is still very much the case, especially in rural areas. A woman's gold can therefore be her only protection against personal misfortune. Hence, the practice of giving an Indian bride gold; this is considered *Streedhan*, or "property of the woman".

India is the world's largest market for gold jewellery, accounting in 2004 for one fifth of the global total.

Gold's important role in society's long-standing customs

Gifts of gold make a vital contribution as tokens of love and precious souvenirs on those emotional occasions that bring people together - weddings, anniversaries, birthdays, Christmas and other religious holidays, graduations, Mother's Day, birthdays, religious ceremonies such as baptisms, and many more.

Gold's function as an adornment, as jewellery, has been in existence for over 6,000 years. The earliest gold jewellery dates from the Sumerian civilization that flourished in the fertile basin between the Tigris and Euphrates rivers around 4,000 BC.

Why is gold so coveted? Since the beginning of time, the intrinsic beauty, warmth, sensuality and spiritual richness of gold has earned it pride of place as the favourite metal of jewellers. Gold has inspired craftsmen to create objects of desire that unite us with our emotions. In the Middle Ages, alchemists attempted to use their magic to make gold from other metals. They believed that gold was a source of immortality, and so it was used in medicines designed to fight old age and prolong life.

Today, consumer demand for gold jewellery is growing by over 20% per annum, demonstrating the confidence that women around the world have in gold. This level of demand far outstrips the supply of gold that mines can produce.

Gold as a preserver of value (inflation hedge, safe haven, etc.)

Gold is an effective hedge against inflation. In addition, gold is inversely correlated to the US dollar, making it a good currency hedge. As an asset class, gold has all the advantages of being universally regarded as a currency, without what are all too often the disadvantages of being subject to the economic and monetary policies of one particular country's government.

Gold's value as an effective portfolio diversifier

Gold is a highly effective portfolio diversifier due to its low to negative correlation with all major asset classes. Over the last 20 years, gold has shown no statistically significant correlation with equities. That applies not just to domestic US equities, but also to international equities, including those traded in London, Tokyo, Frankfurt, and so on.

Gold has also shown no statistically significant correlation with other mainstream asset classes, such as US Government bonds, Treasury Bills, and equity real estate investment trusts. The fundamental reason for this lack of correlation is that the factors driving the gold price are not the same as the factors that determine the returns on other assets. Obviously, there are some economic factors that influence the performance of all investments. But equally obviously, changes in gold supply and demand have no influence over the other asset classes.

As a rule, gold shows no statistically significant correlations with mainstream asset classes. However, there is evidence that when equities are under stress, in other words when shares are falling rapidly in value, an inverse correlation can develop between gold and equities. And this aspect of gold's behaviour runs directly counter to the way other asset classes perform in stress situations.

Gold's value as a currency reserve

Gold is still considered an important reserve asset by most central banks, even though it is no longer the centre of the international financial system. The most important reason is that gold is the only reserve asset that is no-one's liability. This means that, unlike a currency, the value of gold cannot be affected by the economic policies of the issuing country or undermined by inflation in that country.

Gold has a track record of holding its real value over the centuries. Since gold is no-one's liability, it can not be repudiated and holding it is a safeguard against potential unforeseen crises. Gold also brings much needed diversity to a central bank portfolio due to its low correlation with key currencies and its strong inverse correlation with the US dollar. The central bank of Argentina, for example, when diversifying a portion of its reserves away from 100% reliance on the US dollar in 2004, included gold in its purchases.

Gold accounts for 9% of reserves held by central banks (valued at market prices).

Gold's value in industrial applications

Gold ranks among the most high-tech of metals, performing vital functions in many areas of everyday life. Gold's unique properties make it useful in medical applications, pollution control, air bags, mobile telephones, laptop computers, space travel, and many other things we consider indispensable to our modern lives. Approximately 12% of demand for gold comes from industry.

Medical Applications

Because it is “biocompatible”, gold plays an important role in medical implants. For example, gold-coated “stents” are inserted into clogged arteries to clear the flow of blood. Also, because gold is opaque to x-rays, surgeons are able to place a stent with the utmost precision, which helps ensure optimal effectiveness. Other medical implants that contain gold are pace makers and insulin pumps. Gold is used in these devices because of its high level of reliability in micro electronics.

Gold possesses a high degree of resistance to bacterial colonization, and because of this it is the material of choice for implants that are at risk of infection, such as the inner ear. Gold has a long tradition of use in this application and is considered a very valuable metal in microsurgery of the ear.

Gold is being used increasingly in pharmaceutical applications. Gold is ideal for delivering biologically active materials directly into the target tissues in the human body, without damaging the tissues themselves, or altering the biological activity of the material being delivered. Gold helps doctors to deliver precise doses of powerful drugs to the parts of the body where they are required. This is important in the treatment of a range of diseases, including cancer and HIV, the virus that causes AIDS.

On the molecular level, gold has applications through its organic and chemical compounds used in medical science: for instance, anti-cancer drugs or in what doctors have started to describe as a “pharmacy on a chip” – a tiny covering of gold is used to encase micro doses of drugs on an electronic chip that is implanted in the body. When the chip is electronically activated to dissolve the tiny casing of gold, an appropriate dose of drug is released.

In a similar way, gold is the preferred material for a branch of medical research the scientists call “biolistics”, because it is a marriage of biology and ballistics. Strands of DNA are blended with microscopic gold powder and injected into the skin in search of targeted cells, so that the researchers can observe the reaction. In this application, three of gold’s attributes are crucial: first, its non-reactiveness; second, the fact that it is opaque means it can be precisely located, just as with the stents and finally, the fact that gold is dense - it has a high ratio of mass or weight to volume - means that the compound can achieve the high speed required to penetrate the targeted cell.

Environmental Applications

Recently, it has been discovered that gold nanoparticles, measuring only 25 nanometres across, can split oxygen atoms, thereby facilitating oxidation reactions, which create useful organic products as oxygen atoms and carbon compounds combine. **New research published in the top scientific journal *Nature*** has revealed that gold catalysts can clean up an important chemical process that is used every day to produce tons of pharmaceuticals, detergents & food additives.

As a chemical catalyst, gold is playing an important role in new environmental applications, such as pollution control (mercury emissions) and fuel cells. By way of example, the Institute for Green Technology in Tokyo has 30 scientists working on gold catalysts for environmentally sensitive, or “green”, technology applications.

To give you an idea of the importance of catalysis, it has been estimated that about one trillion dollars of the Gross Domestic Product of the United States is derived from processes that use some form of industrial catalysis.

In recent years, catalysts using gold have become a very hot topic of research. There have been breakthroughs in research studies that have shown gold to be an excellent catalyst in a number of important chemical reactions. Some of the potential applications include:

- Pollution control in diesel-powered vehicles, and in the environment;
- Clean energy generation, by means of fuel cells;
- Sensors, for detecting gases in industrial processes;
- And as catalysts for chemical and petrochemical processes. Gold may lead to new routes for the manufacture of many vital chemicals.

Other Applications

The standard touch-tone telephone would not function without the 33 contacts made from gold it contains. Air bag systems fitted in more than 30 million cars around the world rely on gold-coated electrical contacts. And every time you touch a key on your computer it strikes a gold circuit that relays your command to the computer's microprocessor.

Gold is one of the most effective conductors of electricity known to man, and its reliability compared with other metals such as palladium or copper is increased by the fact that gold is also an excellent conductor of heat. Gold is also inert and, therefore, does not react when it comes into contact with other substances. In addition, Gold does not corrode or tarnish, so it is much more reliable than other metals in electronic applications.

Gold mining's commitment to sustainability

The world's major international mining companies all have well-documented social, economic and environmental policies and devote significant resources to sustainable development.

In addition to their own corporate policies, many mining companies have adopted third-party organization guidelines, such as those of the International Council on Mining and Metals. The ICMM states that the Dirty Metals report is merely a reiteration of a litany of problems documented extensively elsewhere on many occasions and fails to address any solutions or responses that have been instigated to address these problems. The ICMM said of the report: *"Many of the recommendations for the mining industry to adopt ...already exist as common practice among ICMM members."*

The National Mining Association says the US gold mining industry is the world's most advanced – using modern technology and stringent environmental safeguards. The NMA says: *"The US gold mining operations are regulated by numerous federal and state environmental laws that are designed to protect air and water resources ...US safety laws, advanced technology and extensive worker training have made the US mining industry the world's safest."*

Gold still needs to be mined in order to fulfil ever-increasing consumer and investor demand.

For additional information on the gold mining industry, please refer to www.responsiblegold.org.

For further information please contact media@gold.org