• Gold

Silver

Platinum

Palladium



Golden Burial Mask of Tutankhamun Ruled c. 1334 BC – 1323 BC



Saint Gaudens US Double Eagle Gold Coin (Produced from 1907 to 1933)

**Morgan Stanley Smith Barney Investment Strategy** 

Portfolio Investment Opportunities in Precious Metals

June 2010

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# The Principal Objectives of this report are:

- To provide some degree of perspective on the role and positioning of gold (and other precious metals) within an economic, financial, societal, and portfolio context in the Modern Era as well as in earlier time frames;
- To set forth proponents' and opponents' views of the advantages and disadvantages, the rewards and risks, of involvement in precious metals;
- To shed light on key factors affecting precious metals prices, including supply-demand forces, expectations concerning inflation and deflation in the general price level, geopolitical conditions, the level of real interest rates, and the structure and health of sovereign credit and the global monetary system; and
- To furnish information about a range of the specific vehicles that provide exposure to precious metals, as well as sources of further learning available in books, in articles, and on internet websites.

# The Hand of Faith Nugget

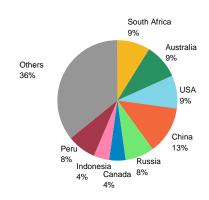


Found on September 26, 1980, the Hand of Faith Nugget is the world's largest gold nugget in existence today. The nugget, discovered in Kingower, near Victoria, Australia, weighs 876 troy ounces. The historic nugget is currently on display in the lobby of the Golden Nugget Casino in Las Vegas, Nevada.

 $\textbf{Source:} \ \textit{www.goldennugget.com}.$ 

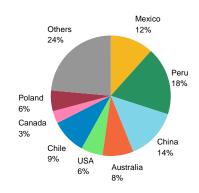
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#### **Gold Mine Production by Region (2009)**



Source: U.S. Geological Survey, Mineral Commodities Summaries, January 2010.

#### **Silver Mine Production by Region (2009)**

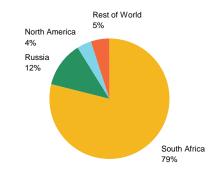


Source: U.S. Geological Survey, Mineral Commodities Summaries, January 2010.

### Section 1

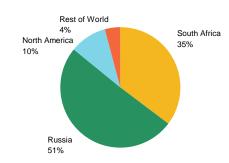
## Advantages and Risks of Precious Metals

### Platinum Supply by Region (2009)



SmithBarney Sources: Johnson Matthey PLC; www.johnsonmatthey.com.

### Palladium Supply by Region (2009)



Sources: Johnson Matthey PLC; www.johnsonmatthey.com.

# Overview of Potential Investment Advantages

- For centuries, gold and certain other precious metals have served as a **store of value**, as a medium of exchange, and at times as a unit of account. In periods of economic uncertainty or in environments subject to potential crises or financial market dislocations, investors have sometimes increased portfolio exposure to precious metals.
- When viewed from a long-term perspective, precious metals have generally been considered a **hedge against inflation** in the general price level.
- Global population, income, economic, and monetary growth have tended to exceed the approximately 1.8% secular annual growth rate in the physical stock of gold.
- In the years since 2000, supply and demand data show that precious metals demand has tended to be driven by **increased net investment and fabrication demand**.
- Because of their underlying supply-demand characteristics and their generally low correlations of returns with many other asset classes, precious metals have tended to be viewed as an asset class with diversification properties that can **improve the risk-reward parameters** of an investment portfolio.

Source: The Art of Asset Allocation, Second Edition, by David M. Darst. McGraw-Hill, 2008.

Nothing Gold Can Stay, 1923 By Robert Frost (1874-1963)

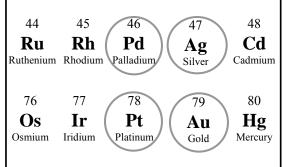
Nature's first green is gold, Her hardest hue to hold. Her early leaf's a flower; But only so an hour. Then leaf subsides to leaf. So Eden sank to grief, So dawn goes down to day. Nothing gold can stay.

## Overview of Potential Investment Risks

# Periodic Table of the Elements

An element's atomic number is defined as the number of protons in its nucleus.

The atomic number and the internationally used atomic symbol of several elements are set forth below, with circles denoting selected precious metals<sup>(1)</sup>.



Source: chemicalelements.com.

A good name is to be desired above great riches, and loving favor above silver and gold.

Proverbs 22:1

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- In addition to their responsiveness to classical forces of supply and demand, the price of precious metals may be subject to: (i) **geopolitical and political factors;** and (ii) expectations concerning the likelihood of significant inflation or deflation in the general price level.
- The monetary value of the **daily trading volume** in precious metals and precious metal-related instruments is relatively small compared to the monetary value of the global daily trading volume in many major currency, equity, and fixed income securities markets.
- Precious metals may be characterized as having a **relatively inelastic supply**, and for gold, a not insubstantial portion (approximately 20%) of all the yellow metal mined in history is in the possession of central banks and official international and regional organizations.
- Physical precious metals pay no dividend and may be cumbersome to store, assay, subdivide, insure, or transport in quantity.
- The value, demand, supply, and disposition of precious metals may be subject to trends in the exploration, production, lending, financing, and sales strategies of select mining companies and the mining industry overall.

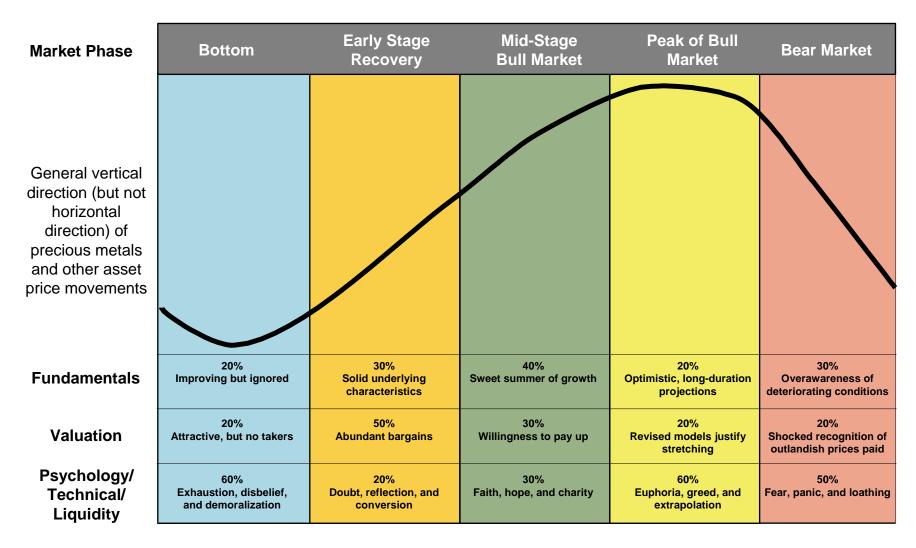
Source: The Art of Asset Allocation, Second Edition, by David M. Darst. McGraw-Hill, 2008.

#### Note:

1. Platinum, Palladium, Ruthenium, Rhodium, Osmium, and Iridium are classified together in the periodic table of the elements as the platinum group metals due to their high resistance to oxidation and corrosion.

#### **ADVANTAGES AND RISKS OF PRECIOUS METALS**

The Gold Debate: The Varying Importance of Factors Driving Precious Metals and Other Asset Prices Across Market Phases



**Source:** Page 313, *The Art of Asset Allocation, Second Edition* (McGraw-Hill, 2008), by David M. Darst, CFA. **Note:** The percentages indicated above are hypothetical only and reflect the personal views of the author.

Debate Arguments Against Gold

### **Fundamental Forces**

- In the 2000-2010 period, the gold market changed from being essentially a market with only a fairly small degree of investment interest to a market where investment interest has tended to play a dominant role. Such investment interest has included individual investors, hedge funds, Sovereign Wealth Funds, and Central Banks.
- Private sector bullion holdings exceed those of the world's central banks. Large outflows from and inflows into gold Exchange-Traded Funds (ETFs) suggest that investors may have been increasingly trading in gold funds in a more aggressive way than before, and it is unclear whether private holders of gold ETFs would be tempted (or forced) to sell during any large gold price correction.
- Only 15% of gold has in recent years been used as a monetary metal; the rest of it has been used as a commercial metal, and that use, particularly as a corrosion-resistant electrical conductor for semiconductors, appears to be declining. Gold is a soft metal having relatively limited industrial applications at the elevated prices of the Modern Era.
- If the Authorities can bring about an economic recovery that is not inflationary, gold prices might come under selling pressure. Under such a scenario, tax revenues could be expected to increase and the sovereign credit quality of governments could be expected to increase.

### **Valuation Forces**

- Gold does not produce earnings or pay dividends that can be compounded through time. The total return from holding gold during long periods may therefore prove unattractive. From 1969 to 2007, for example, gold exhibited a greater degree of volatility than the Standard & Poor's 500 index (as measured by the standard deviation of annual returns), and gold generated substantially lower compound annual returns than did the S&P 500.
- A significant flaw of gold is that it is very difficult if not impossible to value using conventional valuation methodologies. According to gold consultancy GFMS, in 2009 global demand for gold for *investment* purposes surpassed gold *jewelry* demand for the first time since 1980, when the last gold bubble burst. With jewelry demand (the traditional mainstay of the gold market) declining (**please see pages 29** and 30 of this document), gold prices may not be able to sustain prices above \$1,200 per troy ounce for a meaningful period of time.

Debate Arguments Against Gold

### Psychological, Technical, and Liquidity Forces

- One of the key reasons gold is valuable is that at times, investors believe it is valuable. Investing in gold represents essentially a form of psychological insurance against actual or threatened monetary, financial, economic, political, and/or geopolitical turbulence; over meaningful periods of time during periods of societal progress and accomplishment, gold has difficulty competing with human innovation, ingenuity, synthesis, creativity, resourcefulness, integration, originality, enterprise, industriousness, energy, diligence, assiduity, and optimism.
- Since gold is considered a safe-haven investment in times of economic, financial, political, and geopolitical crisis, and it is less widely sought for industrial uses (in contrast to copper and oil), it can at times attract emotional, speculative investors who may amplify its price gyrations. If gold is purchased as a hedge against systemic meltdown and/or other quasi-apocalyptic/doomsday scenarios, the actual arrival of such conditions may make it difficult to access, transport, subdivide, protect, and properly value and exchange gold for other resources.
- As of mid-2010, gold appeared to have become widely publicized in the media, on blogs and websites, and among the investing public; once an investment idea permeates the popular consciousness, it may be close to peaking.
- The risk that gold prices could sink by a few hundred dollars per troy ounce appears to be especially prevalent when fear remains in the air, when gold and other commodities trace bubble-like price patterns, and when late-night TV advertisements offer to buy gold jewelry sight unseen.
- Gold's price rally from 2000 through mid-2010 still lags behind its 2,200 percent rise in magnitude in the inflationary 1970s, or its quite rapid five-month 70 percent jump in 1933-1934. But gold bulls rarely give focus to the intervening lean years. Presciently buying gold in the early 1930s, just before US President Franklin Delano Roosevelt devalued the US dollar, and holding it through to mid-2010 would have generated a 60-fold nominal price return, compared to a 1,000-fold gain for US equities.
- Gold has a mixed history of serving as a reliable inflation hedge; at times, however, gold has functioned as a haven against sudden currency depreciation.
- After exhibiting rapid, almost vertical price increases (a "parabolic price rise"), gold prices can drop sharply. In January 1980, the London afternoon gold fix reached above \$800 per troy ounce on only two occasions. When gold reached its early 1980 peak of \$850 a troy ounce in January 1980, it did not stay there long. Just 10 days after hitting that record, spot bullion prices fell below \$700; and less than two months later, gold traded at less than \$500 an ounce.

**ADVANTAGES AND RISKS OF PRECIOUS METALS** 

## The Gold Debate

Debate Arguments Against Gold

### Psychological, Technical, and Liquidity Forces

- Secular bull markets tend to end in parabolic price blowoffs and as of mid-2010, gold skeptics were pointing out that the metal appeared to be approaching such a phase.
- As of mid-2010, the market for precious metals appeared overextended following the upward price moves of the preceding two months. On the COMEX futures exchange, the net speculative long positions had swelled to a record 273,552 contracts of 100 troy ounces each. Total open interest had never been higher, at 693,661 contracts.(up-to-date data on COMEX futures exchange net speculative long positions and total open interest can be found at http://www.cmegroup.com/company/comex.html)

Debate Arguments in Favor of Gold

#### **Fundamental Forces**

- Approximately 60% of the world's total available gold is already above the ground and annual mine production appears to have peaked in 1999-2000.
- Fundamentally positive supply-demand factors identified by gold analysts include: (i) strong jewelry buying by rising middle classes in emerging countries; (ii) investors' apparent increased long-term interest in gold as a hedge against the risks of persistent currency weakness; (iii) a relatively inelastic supply curve over the medium term and declining output since the turn of the New Millennium in South Africa, for many decades the world's largest gold producer; and (iv) recurring bouts of concern about global inflation and the health of the global financial system.
- Gold has two interesting properties, according to Roy W. Jastram in his 1977 book, *The Golden Constant:* (i) it is cherished by broad swaths of the world's population; and (ii) it is indestructible. Gold can be melted down, but it does not change its chemical makeup or weight in the process.
- Many developed nations appear to face large budget deficits and significant future social welfare expenditures (such as retirement and healthcare), their debt levels are rising, and their monetary authorities have been creating copious amounts of money. Several developed countries cannot afford higher interest rates and in order to keep downward pressure on government bond yields, it appears that these countries' central banks will have to resort to debt monetization. In other words, the central banks will create new money in order to fund the budget deficits. Throughout much but by no means all of history, currency debasement has tended to be the norm rather than the exception.
- Gold's status as a legitimate monetary asset appears to be increasingly accepted. No longer is gold being broadly dismissed as a refuge primarily for conspiracy theorists who satisfy their paranoid worries by stockpiling canned foods and ammunition; such conditions represent a certain portion of the mainstream media's portrayal of those who express deep skepticism about the value of government-issued paper money.
- In an effort to bail out their banking systems, central banks in several advanced nations injected significant monetary sums into their economies and this newly created money then found expression as excess bank reserves. As of mid-2010, these excess bank reserves had not permeated through their respective economies, but when they do, general price levels may experience meaningful increases and gold may then likely be sought as a store of value.
- Deflation in the general price index may actually be good for gold, owing to the significant increase that tends to occur in gold prices caused by governments' offsetting reflationary efforts to escape deflation.

Debate Arguments in Favor of Gold

### **Fundamental Forces**

- If gold prices were expressed not in US dollars per troy ounce but instead in troy ounces per US dollar, since 1971 the value of a US dollar has declined 97.1% from one thirty-fifth of a troy ounce (0.0286), to approximately one twelve-hundredth of a troy ounce (0.0008) as of mid-2010. Several of the monetary value characteristics of gold compared to paper money appeared significantly out of balance as of mid-2010:
  - Total private investment in gold: approximately \$800 billion (approximately 0.05% of global household net worth)
  - Market value of all gold above ground: approximately \$5.0 trillion
  - Global M-3 money supply: \$60.2 trillion
  - Value of global financial assets: \$200 trillion
- Longer term, as emerging countries' income levels tend to increase, emerging countries' inverse demand *sensitivity* to gold price movements may be expected to decrease, both with respect to changes in and the level of gold prices.
- All the gold mined in history, approximately 160,000 tons, or 5.14 billion troy ounces (as of year-end 2009) could barely fill two Olympic-size swimming pools. More than half of all the gold ever mined has been extracted since 1960. Already exploited are the hundred mile long gold reefs in South Africa and the berry-sized gold nuggets in California. A significant portion of known remaining gold ore deposits tends to exist as traces in remote and politically fragile regions of the world.
- Despite gold ore exploration spending increasing six-fold to mid-2010 since its cyclical low in 2002, total gold resource increases from *new discoveries* have meaningfully declined. Over 90% of exploration-derived reserve increases for the major gold producers have represented resource upgrades at existing projects. While the four-fold increase in gold prices over the 2000-2009 period allowed previously subeconomic resources to be reclassified as reserves, the number and size of new discoveries has remained quite low. Peak production theory holds that after about half of a total resource is extracted, riskier, more remote, and reduced-grade resources cause production to plateau or decline. According to United States Geological Survey data, an estimated 160,000 metric tons of gold (5.14 billion troy ounces) have been mined throughout the history of the world. With the remaining global gold ore reserve base reported to be approximately 100,000 metric tons (3.22 billion troy ounces) United States Geological Survey estimates thus imply that over 60% of the world's known recoverable gold has already been extracted.
- Many gold mining companies have reduced or discontinued the amount of gold they sell forward as a hedge; some gold mining companies have bought back their forward sales, a process known as de-hedging.

Debate Arguments in Favor of Gold

#### **Fundamental Forces**

- As a sign of the shifting landscape for gold, central banks already owning meaningful amounts of gold appear to have significantly reduced or halted altogether their gold sales, and other central banks (in China, India, Russia, Venezuela, Mexico, Sri Lanka, Greece, Kazakhstan, Qatar, Serbia, the Ukraine, and Mauritius, among other countries) have executed purchases of gold to varying degrees. In 2009, central banks and governments purchased a total of 425.4 metric tons (13.7 million troy ounces), the largest increase since 1964 and the first net expansion since 1988.
- Central banks appear to have somewhat diminished faith in the creditworthiness of other governments. If central banks have in fact lost some degree of confidence, private investors may be motivated to do the same. Reserves are intended to protect against emergencies. In an emergency, gold may be perceived as more likely to hold its value than paper money. According to *The Economist* magazine and other observers, the mid-2010 financial system contained many elements of unsustainability. Certain large debtor countries were running huge fiscal deficits, but retained at the same time the ability to depreciate their currencies and to offer near-zero interest rates on their short-term debt. Gold price movements may reflect investors' fears of a significant crisis in the global foreign exchange markets.

### **Valuation Forces**

- Economic output as measured by Gross Domestic Product (GDP) has increased approximately sixfold between 1980 and 2010. When scaling up the gold price peak of 1980 by a similar six times multiple, it is posited that the gold price could theoretically reach a level around \$5,300 per troy ounce.
- As of mid-2010, the global M-3 money supply measure in dollar terms had reached about 10 times what it was in 1980. The aggregate total global gold supply amounted to 160,000 metric tons (5.14 billion troy ounces), up from 110,000 metric tons (3.54 billion troy ounces) in 1980. Adjusting for the increased M-3 money supply as well as the increased gold supply, the 1980 peak price would work out to about \$5,700 per troy ounce as of mid-2010.
- Based on the *officially reported* version of consumer price inflation, the peak of \$850 per ounce for gold in 1980 is equivalent to about \$2,300 as of mid-2010. For gold to reach its prior all-time high of \$850, achieved on January 21, 1980, in *Alternate CPI-Adjusted* dollars as calculated by Shadow Government Statistics, the price would have to rise to \$6,650 per troy ounce.

Debate Arguments in Favor of Gold

#### **Valuation Forces**

- Compared to other secular bull market rallies, gold did not yet seem to be in a bubble as of mid-2010. From July 1999 to June 2010, the trough-to-peak percent change in the gold price was 389%. Using secular bull market upswings during other periods (of differing lengths of time), the trough-to-peak change for the S&P 500 index was 1,317%, for the West Texas Intermediate crude oil price was 882%, and for the S&P Homebuilding Index was 954%.
- As of mid-2010, real interest rates were negative in many developed nations. Due to central banks' reflationary efforts, short-term interest rates were well below official inflation rates. Therefore, holding cash represented a loss-making proposition after inflation and thus some investors were motivated to turn to gold.

### Psychological, Technical, and Liquidity Forces

- Gold is a store of value and one that has been relatively durable and reliable for significant periods within the past. No fiat currency system in history appears to have outlived gold.
- Although a fourfold increase over a small number of years from a \$1,000 per troy ounce gold price to more than \$5,000 per troy an ounce seems extreme, exactly such a trajectory was experienced over the 1978-1980 time frame.
- Based on the record high prices set by gold in December 2009, the price had risen just under four-and-a-half times in the 2000-2009 time period, similar to the magnitude of the rise in the inflation-plagued years immediately leading up to May 1978. In both of these instances, the gold price may have been about to inflate dramatically, as the mania spread from the early-investing contrarians to the later stage broader public, or expressed another way, from the "boom" stage to the "euphoria" stage.
- Gold is regarded as a secure store of value because people believe it is safe. Investors have been worrying that many governments are not doing enough to restrain budget deficits, and thus these governments may resort to the politically expedient route of printing money to inflate away sovereign indebtedness. One of the main arguments for gold has been based on the expectation that all of the money that many major central banks have been printing will be difficult to control when meaningful inflation comes back.

Debate Arguments in Favor of Gold

### Psychological, Technical, and Liquidity Forces

- The relationship between gold and financial crises extends through many centuries. Gold prices may be likely to rise, anticipating inflation, further advances in commodity prices, global supply chain shortages, currency debasement, and increased debt monetization (money printing to buy government debt) by major central banks.
- During times of economic uncertainty when confidence in financial assets is low, gold has tended to assume the role of a currency.
- Gold is perceived as a defense against: (i) monetary, fiscal, exchange-rate, wage-price capital controls, social unrest expropriation, armed conflict, and/or protectionist policy errors by countries' elected and/or appointed officials; (ii) counterparty risk within domestic and cross-border financial systems; (iii) breakdowns in the physical, behavioral, and/or electronic infrastructure affecting the trading, settlement, and custody of assets; and/or (iv) secular deterioration in the quality of and investors' confidence in sovereign debt.
- Through excessive credit creation and allowing a high degree of leverage, several large countries witnessed successive bubbles formed in equities, residential real estate, commercial real estate, and certain other asset classes; when these asset-price bubbles began to burst, in order to forestall appropriate asset price adjustments some governments implemented: (i) bailouts, takeovers, rescues, and/or capital injections into weakened financial entities; (ii) large scale deficit spending and other fiscal stimulus measures; and/or (iii) monetary policy measures (including extremely low policy interest rates, accounting forbearance, credit support activities, cross-border swap lines, and/or quantitative easing, also known as debt monetization or "printing money" to purchase sovereign, government agency, and/or corporate securities).
- Gold is perceived as being able to help alleviate major weaknesses in the global monetary system. One primary systemic weakness derives from the fact that the level of reserves in the global economy depends to a not insignificant degree on the United States running large balance of payment deficits to supply such reserves, and thereby becoming increasingly indebted to the rest of the world. Moreover, the system in place for the last several decades of the twentieth century and the first decade of the twenty-first century tends to create asset bubbles within countries that generate large balance of payments surpluses; such asset bubbles usually severely damage the surplus generating countries' banking sectors when they collapse.

# Attempted Theft of the Crown Jewels

On May 9, 1671, Colonel Thomas Blood made an infamous attempt to steal the crown jewels from the Tower of London. Having befriended the jewel keeper, Blood and two other men convinced the jewel keeper to give them a view of the famous jewels, which had been locked away in the Tower. Blood and his men knocked the jewel keeper to the ground where he was bound and gagged. However, the jewel keeper managed to sound the alarm and the thieves were captured while trying to escape. Following the attempted theft, the Crown Jewels were moved to a part of the tower known as the Jewel House, where they remain heavily guarded at all times.

Source: www.wikipedia.org.

### MorganStanley SmithBarney

### **The British Crown Jewels**

#### St. Edward's Crown



St. Edward's Crown is one of the most famous crowns within the British Crown Jewels collection. St. Edward's Crown was made in 1661 for the coronation of Charles II and is used solely for the coronation of the British monarch. The crown is made of gold and is set with 444 precious and semi-precious stones.

#### Section 2

### Precious Metals Investment Performance and Correlations

### The Sovereign's Orb



The Sovereign's Orb, another of the British Crown Jewels, was also created for the coronation of Charles II in 1661. The hollow gold orb, decorated in over 100 precious and semi-precious, measures 6.5 inches in diameter and weighs 42 ounces.

Source: www.wikipedia.org.

# The Three Most Expensive Coin Sales in US History

| Coin  | Price          |  |  |  |  |  |
|---|----------------|--|--|--|--|--|
| 1933 Saint-Gaudens<br>\$20 Double Eagle<br>(Sotheby's, 2002)  | \$7.59 million |  |  |  |  |  |
| 1804 Draped Bust<br>Silver Dollar<br>(Auction, 1999)  | \$4.14 million |  |  |  |  |  |
| 1913 Liberty Head<br>V Nickel<br>(Blanchard & Co., 1999)  | \$3.00 million |  |  |  |  |  |
| Source: Herrick, Thaddeus, "Big Money: When 5 Cents is Worth \$3 Million," The Wall Street Journal, May 20, 2004. |                |  |  |  |  |  |

# The American Numismatic Association

The mission of the American Numismatic Association, a nonprofit, educational organization chartered by the United States Congress, is to promote the study and collection of money, including coins, tokens, medals, and paper currency, for research, interpretation, and preservation of history and culture from ancient times to the present. For more information, including the Numismatic Association's rare coin collection, please see www.money.org.

Source: www.money.org.

## MorganStanley SmithBarney

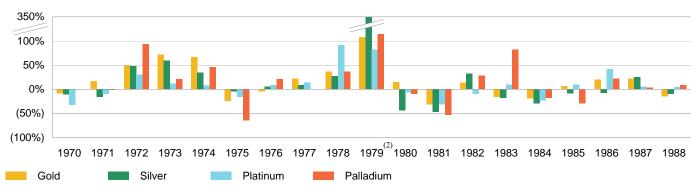
#### PRECIOUS METALS INVESTMENT PERFORMANCE AND CORRELATIONS

## Annual Price Performance for Precious Metals

1970-2009

### Annual Precious Metals Price Performance Comparison<sup>(1)</sup>

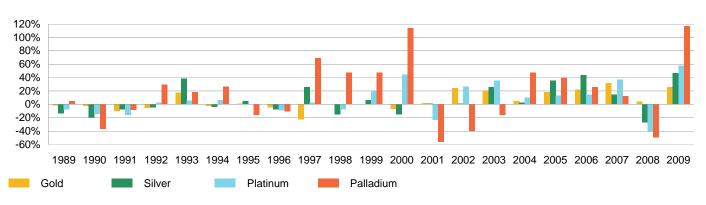
1970-1988



Source: Bloomberg LLC; Handy and Harman.

### **Annual Precious Metals Price Performance Comparison**(1)

1989-2009



Source: Bloomberg LLC; Handy & Harman.

#### Notes

- 1. Gold and silver price data show the year-over-year change for year-end Handy & Harman spot metal prices from Bloomberg LLC; platinum and palladium price data show the year-over-year change for the Johnson Matthey average December spot metal prices.
- 2. In 1979, a number of factors (including the Hunt Silver Crisis, discussed elsewhere in this document) contributed to a significant rise in precious metals prices. Total returns in 1979 for precious metals were as follows: gold (+126%); silver (+361%); platinum (+82%); and palladium (+139%).

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#### PRECIOUS METALS INVESTMENT PERFORMANCE AND CORRELATIONS

## Correlations of Annual Returns of Precious Metals

Correlations (from 1979-2009) Across Precious Metals, Selected Asset Classes, and Inflation

### Fabergé Coronation Egg



Crafted in the shops of Peter Carl from 1885 to 1917, Fabergé Fabergé eggs were designed primarily at the request of Russian Tsars Alexander III and Nicholas II as annual Easter gifts for Tsarinas Maria and Alexandra. The designs for the eggs were inspired from Russian traditions, art, and history, and it is believed that a total of 66 eggs were produced. Each egg was unique, and most opened to reveal beautiful miniatures, such as the gold and platinum coronation coach (shown above). In making the eggs, Fabergé used gold, silver, platinum, and palladium, as well as other metals and precious gems.

Sources: www.wikipedia.org; www.pbs.org.

#### Correlations of Gold Annual Returns with the Annual Returns of:

#### Correlations of Silver Annual Returns with the Annual Returns of:

| Length of<br>Holding<br>Period | Silver | Platinum | Palladium |      | 10-Year US<br>Treasury<br>Bond | US CPI | Cash<br>(US 90-day<br>T-Bill) | Length of<br>Holding<br>Period | Gold | Platinum | Palladium |      | 10-Year US<br>Treasury<br>Bond | US CPI | Cash<br>(US 90-day<br>T-Bill) |
|--------------------------------|--------|----------|-----------|------|--------------------------------|--------|-------------------------------|--------------------------------|------|----------|-----------|------|--------------------------------|--------|-------------------------------|
| 5 Years                        | 0.71   | 0.90     | 0.64      | 0.84 | -0.61                          | 0.89   | 0.31                          | 5 Years                        | 0.71 | 0.84     | 0.89      | 0.98 | -0.96                          | 0.62   | -0.01                         |
| 10 Years                       | 0.66   | 0.43     | -0.01     | 0.32 | -0.18                          | 0.26   | -0.35                         | 10 Years                       | 0.66 | 0.54     | 0.39      | 0.80 | -0.75                          | 0.36   | -0.28                         |
| 30 Years                       | 0.88   | 0.69     | 0.40      | 0.03 | -0.15                          | 0.42   | 0.00                          | 30 Years                       | 0.88 | 0.64     | 0.55      | 0.12 | -0.19                          | 0.44   | 0.07                          |

Sources: Morgan Stanley Smith Barney Investment Strategy; Bloomberg LLC; Handy & Harman.

Sources: Morgan Stanley Smith Barney Investment Strategy; Bloomberg LLC; Handy & Harman.

#### Correlations of Platinum Annual Returns with the Annual Returns of:

#### Correlations of Palladium Annual Returns with the Annual Returns of:

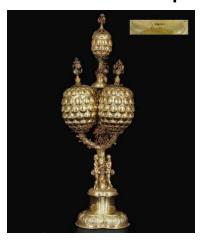
| Length of<br>Holding<br>Period | Gold | Silver | Palladium |      | 10-Year US<br>Treasury<br>Bond | US CPI | Cash<br>(US 90-day<br>T-Bill) | Length of<br>Holding<br>Period | Gold  | Silver | Platinum |      | 10-Year US<br>Treasury<br>Bond | US CPI | Cash<br>(US 90-day<br>T-Bill) |
|--------------------------------|------|--------|-----------|------|--------------------------------|--------|-------------------------------|--------------------------------|-------|--------|----------|------|--------------------------------|--------|-------------------------------|
| 5 Years                        | 0.90 | 0.84   | 0.90      | 0.92 | -0.85                          | 0.76   | -0.10                         | 5 Years                        | 0.64  | 0.89   | 0.90     | 0.89 | -0.98                          | 0.52   | -0.40                         |
| 10 Years                       | 0.43 | 0.54   | 0.74      | 0.63 | -0.42                          | 0.66   | -0.02                         | 10 Years                       | -0.01 | 0.39   | 0.74     | 0.48 | -0.44                          | 0.51   | 0.21                          |
| 30 Years                       | 0.69 | 0.64   | 0.71      | 0.21 | -0.29                          | 0.16   | -0.20                         | 30 Years                       | 0.40  | 0.55   | 0.71     | 0.31 | -0.28                          | 0.14   | -0.02                         |

Sources: Morgan Stanley Smith Barney Investment Strategy; Bloomberg LLC; Handy & Harman.

Sources: Morgan Stanley Smith Barney Investment Strategy; Bloomberg LLC; Handy & Harman.

# Principal Uses of Gold and Silver

### The Osterode Cup



In Feb 2009, Christie's Paris raised \$484 million from the sale of the art holdings of Yves Saint Laurent and Pierre Bergé.

Of special interest was the sale of the Saint Laurent-Bergé silver, miniatures, and other decorative objects, which brought in a total of \$25.7 million, with every lot sold.

The top lot, the silver-gilt **Osterode cup** from 1649, was auctioned for €853,000 (\$1.1 million), more than five times its presale high estimate of €150,000.

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### **Principal uses of Gold**

- Jewelry
- Electrical Products
- Dentistry
- A financial asset



#### Gold coin of Coenwulf (King of Mercia)

This coin also provides new information about the status of London during Coenwulf's reign. In addition to carrying his name and title on the obverse, the coin contains an intriguing inscription which parallels with a gold coin of Coenwulf's contemporary, Charlemagne. This suggests that Coenwulf was playing one-upmanship games with the most powerful ruler in Europe.

### Principal uses of Silver

- Jewelry
- Industrial and electronic
- Photography
- Coinage
- Medical
- A financial asset



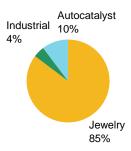
**Tiffany & Co.** A silver and enamel exposition vase, 1893. It was auctioned for \$284,000 in January 2005.

#### PRECIOUS METALS INVESTMENT PERFORMANCE AND CORRELATIONS

# Principal Uses of Platinum and Palladium

#### **China Platinum Demand**

Total China Market 2.1m oz



Source: www.matthey.com. Data as of Jan. 2010.

## **Principal uses of Platinum**

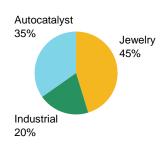
- Autocatalyst
- Petroleum and plastics
- Jewelry
- Dentistry and medicine
- A financial asset



A Platinum iPod created by Goldstriker

### **China Palladium Demand**

2009 Total China Market 1.5m oz



Source: www.matthey.com. Data as of Jan. 2010.

## **Principal uses of Palladium**

- Autocatalyst
- Industrial and electronic
- Jewelry
- Photography
- Hydrogen storage and technology
- A financial asset



This Cartier watch, called *Santos Mysterieuse* is encased in a palladium set with round diamonds. Presented in a limited edition of 100 pieces, the *Santos Mysterieuse* displays the time on a transparent bubble.

#### Morocco's "Lead, Silver, and Gold" Monologue from Shakespeare's *The Merchant of Venice*

**MOROCCO:** [Examining three caskets: one gold, one silver, one lead.]

Some god direct my judgment! Let me see — I will survey the inscriptions back again.

What says this leaden casket?

'Who chooseth me must give and hazard all he hath.'
Must give — for what? for lead! hazard for lead?
This casket threatens; men that hazard all

Do it in hope of fair advantages.

A golden mind stoops not to shows of dross; I'll then nor give nor hazard aught for lead. What says the silver with her virgin hue?

'Who chooseth me shall get as much as he deserves.' As much as he deserves? Pause there. Morocco.

And weigh thy value with an even hand:

If thou be'st rated by thy estimation, Thou dost deserve enough; and yet enough

May not extend so far as to the lady;

And yet to be afeard of my deserving Were but a weak disabling of myself.

As much as I deserve? Why that's the lady! I do in birth deserve her, and in fortunes.

In graces, and in qualities of breeding;

But more than these, in love I do deserve.

What if I strayed no farther, but chose here?

Let's see once more this saying graved in gold: 'Who chooseth me shall gain what many men desire.'

Why that's the lady! All the world desires her; From the four corners of the earth they come

To kiss this shrine, this mortal breathing saint. The Hyrcanian deserts and the vasty wilds

Of wide Arabia are as thoroughfares now For princes to come view fair Portia.

The watery kingdom, whose ambitious head

Spits in the face of heaven, is no bar To stop the foreign spirits, but they come

As o'er a brook to see fair Portia.

One of these three contains her heavenly picture.

Is't like that lead contains her? 'Twere damnation To think so base a thought; it were too gross

To rib her cerecloth in the obscure grave.

Or shall I think in silver she's immured, Being ten times undervalued to tried gold?

O sinful thought! Never so rich a gem

Was set in worse than gold. They have in England A coin that bears the figure of an angel

Stamped in gold — but that's insculped upon; But here an angel in a golden bed

Lies all within. Deliver me the key.

Here do I choose, and thrive I as I may!

Act I, Scene vii, The Merchant of Venice, 1595-1596

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#### Section 3

## Overview of Gold

"Gold is a treasure, and he who possesses it does all he wishes to in this world, and succeeds in helping souls into paradise."

— Christopher Columbus

"Gold can a path through hosts of warders clear. And walls of stone more swiftly can displace than ever lightning could."

— Quintus Horatius Flaccus (Horace)

The Saint Gaudens Gold Double Eagle





The Saint Gaudens Gold Double Eagle, also referred to as the "\$20 gold piece," is one of the most famous coins in US history. Augustus Saint Gaudens, a leading sculptor in the early 20<sup>th</sup> century, was asked by US President Theodore Roosevelt to design the coin in 1907. The \$20 gold piece was minted from 1907-1933 and contained 0.9675 troy ounce of gold.

Source: www.coinresource.com.

"Gold is not a perfect standard of value: it is certain that paper has shown itself a still more imperfect one."

British economist T.S.Gregory

#### **OVERVIEW OF GOLD**

# History and Background of Gold

#### The SS Republic

On August 18, 2003, a treasure hunting team led by Odyssey Marine Exploration discovered the *SS Republic* and uncovered what may be one of the richest shipwreck treasures ever found.

En route from New York to New Orleans, the ship sunk near Savannah, Georgia on October 25, 1865 during a violent hurricane.

According to historical records, it appears that the Republic may have been carrying nearly \$400,000 (in 1865 US dollars) of gold and silver coins. At the time of the *Republic*'s discovery in 2003, estimates made from historical records and comparable coin sales placed the cargo's possible value at 120-180 million US dollars.

# Other Renowned Recovered Shipwreck Treasures include:

- -La Concepcion, sunk 1641, recovered 1987.
- -The Atocha, sunk 1622, recovered 1985.
- -The Whydah, sunk 1717, recovered 1984.
- -The SS Central America, sunk 1857, recovered 1988.
- -The Islander, sunk 1901, recovered 1996.

  Source: Odyssey Marine Exploration; nationalgeographic.com; www.wreckhunter.net.

- For thousands of years, gold has been treasured for its beauty and rarity and embraced as: (i) a symbol of wealth, faith, and power; (ii) a medium of international exchange; (iii) a store of value; and during certain periods of time, (iv) as a unit of account.
- From the voyage of Christopher Columbus in 1492, through the 18<sup>th</sup> century, Central and South America were the main suppliers of gold to world commerce.
- Following the discovery of gold in California in 1848, North America became the world's major gold supplier.
- As of 2009, China, the United States, and Australia were the leading producers of newly mined gold.
- In 2009, the US dollar value of aggregate global gold demand remained above the \$US100 Billion mark for the second year in succession against a backdrop of uncertainty in financial and commodity markets.
- Gold also functions as an important industrial commodity. It is considered an excellent conductor of electricity, is highly resistant to corrosion, and is chemically stable, making gold critically useful in electronics and other high-technology applications.
- One metric ton of gold equals 32,151 troy ounces, or 35,274 avoirdupois ounces.
- One troy ounce of gold equals 1.0971 avoirdupois ounces.

Source: "What's Good for the Goose," Worth Magazine, November 2002, World Gold Council.



Federal Reserve Bank, New York, NY



Bank of England, London, UK



The European Central Bank (ECB) will be constructing its new headquarters up until 2014 on the site of the Grossmarkthalle (former wholesale market hall) in Frankfurt, Germany.

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#### **OVERVIEW OF GOLD**

# Why Central Banks Hold Gold

- Monetary authorities have long held gold in their reserves. Good reasons exist for countries continuing to hold gold as part of their reserves. These motivations are recognized by central banks themselves, although different central banks may emphasize different factors.
- **Diversification**: Gold tends to offer good diversification properties in a currency portfolio. These stem from the fact that its value is determined by supply and demand in the world gold markets, whereas currencies and sovereign debt securities depend on government promises and variations in central banks' monetary policies. The price of gold may therefore behave in a completely different way from the prices of currencies or the exchange rates between currencies.
- **Economic Security**: Gold has maintained its real purchasing power value in the long run and thus may be suited to form part of central banks' reserves and provide economic security.
- **Physical Security:** Countries have in the past imposed exchange controls or complete asset freezes. Reserves held in the form of foreign securities are vulnerable to such measures. When appropriately located, gold tends to be much less vulnerable. Reserves are for potential use in an emergency. Total and incontrovertible liquidity is therefore essential. Gold is perceived to provide this.
- **Unexpected Needs:** Owning gold represents an option against an unknown future. It provides a form of insurance against improbable but, when they occur, highly unsettling and/or damaging events.
- Confidence: The public tends to take confidence from knowing that its government holds gold.
- **Income:** A gold lending market exists, and gold can also be traded on a tactical basis to try to generate profits.
- **Insurance:** The opportunity cost of holding gold may be viewed as comparable to an insurance premium.

Source: World Gold Council.

#### Central Bank Gold Sales Agreements (CBGA)

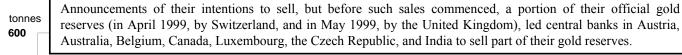
- The first Agreement (CBGA 1, also known as the Washington Agreement on Gold, signed on September 26, 1999) lasted from September 27, 1999 to September 26, 2004 and covered the sales of 2,000 tonnes of gold (64.3 million troy ounces) over that period.
- The second Agreement (CBGA 2) lasted from September 27, 2004 to September 26, 2009 and provided for a maximum of 500 tonnes (16.1 million troy ounces) to be sold in each agreement year. Total sales under CBGA 2 amounted to 1,884 tonnes (60.6 million troy ounces).
- The third Agreement (CBGA 3)
   covers sales for a period of five
   years from September 2009
   through September 2014 and
   provides for a maximum of 400
   tonnes (12.9 million troy ounces) to
   be sold in each agreement year.
  - Under CBGA 3, as of April 27, 2010, Central Banks had only sold a total of **7.2 tonnes** (231,487 troy ounces) of gold (including IMF sales of 5.6 tonnes (180,046 troy ounces)).

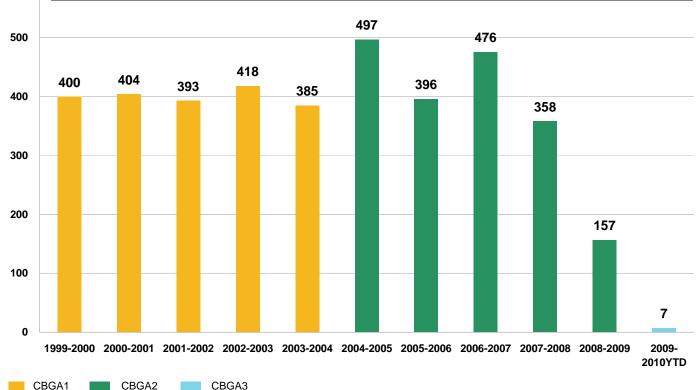
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#### **OVERVIEW OF GOLD**

# Gold Sales under Central Bank Gold Agreements

#### Gold Sales under Central Bank Gold Agreements (CBGA)





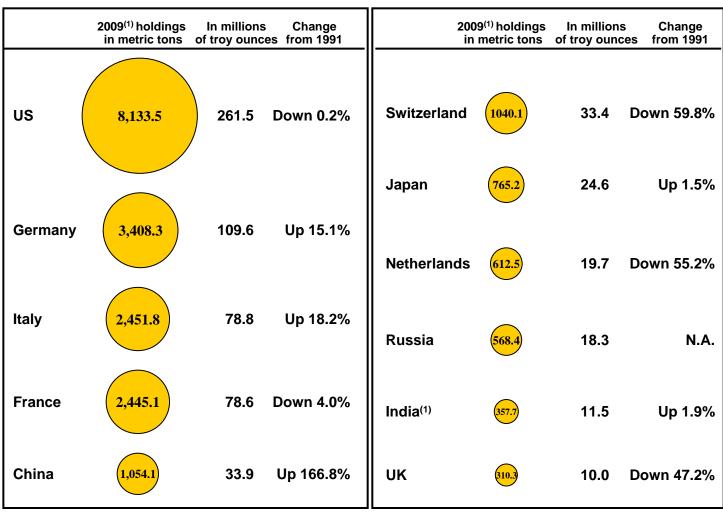
Source World Gold Council

# Major Central Banks' Gold Holdings

- To increase its gold holdings as a percentage of total foreign currency reserves to the world's central bank average of 10%, China would need to buy US\$180 billion of gold, or about 5,400 metric tons, the equivalent of more than two years of global mine production.
- As of September 2009, central banks around the world owned a total of 26,297 metric tons (845.5 million troy ounces) of gold, equivalent to 11 years of global production, down from 29,214 tons (939.3 million troy ounces) in 1991, according to the World Gold Council.
- If the nine largest foreign exchange reserve-owning countries decided to increase their gold holdings to 10% of their total reserves, as of mid-2010, this would imply the additional acquisition of 11,174 metric tons (359.2 million troy ounces); to 25%, 33,254 metric tons (1.069 billion troy ounces).

Source: "Central Banks Join a New Gold Rush," November 11, 2009, Carolyn Ciu, The Wall Street Journal.





Source: World Gold Council.

#### Note:

<sup>1.</sup> India added 200 metric tons of gold to its reserves in October 2009. The above data are as of September 2009 and exclude the gold holdings of the International Monetary Fund and the European Central Bank.

The word "gold" derives from the Anglo-Saxon word "geolo," meaning yellow.

#### Gold as an element:

Symbol: Au Atomic number: 79

Atomic Mass: 196.967

Melting Point: 1064 degrees C°
Boiling Point: 2808 degrees C°

Color: Gold

Characteristics: soft, malleable

Source: Edumine Element Table.

# The Bezant Gold Coin of the Byzantine Empire



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#### **OVERVIEW OF GOLD**

## Gold as an Asset Class

**Description and Choices** 

### **Description**

- Gold is a precious yellow metallic element, not subject to oxidation or corrosion, with 79 protons in its nucleus and an atomic weight of 196.967. Gold occurs in the earth's crust at the rate of 0.004 parts per million.
- The first gold coins are believed to have been minted approximately 2,700 years ago, and since then, gold has for varying lengths of time functioned alongside or instead of various other forms of currency as a medium of exchange, store of value, and unit of account. For example, throughout its 1,100-year history, the Byzantine Empire, with Constantinople as its capital, maintained a monetary economy based on gold.
  - Its gold coin, weighing approximately 4.5 grams and called the bezant (also known as the solidus, or nomisma) circulated freely within and outside the Byzantine Empire for 645 years, from 324 to 969 A.D.

Source: The Art of Asset Allocation, Second Edition, by David M. Darst, CFA. McGraw-Hill, 2008; Morgan Stanley Smith Barney Investment Strategy Asset Class Review – Gold. September 14, 2009.

### **Choices**

- Gold can be purchased and sold in a variety of forms, including:
  - (i) recently minted legal tender and commemorative coins;
  - (ii) previously issued coins and medals of numismatic value;
- (iii) gold bars and bullion;
- (iv) shares of gold mining companies;
- (v) exchange-traded funds, closed-end funds, and open-end funds;
- (vi) gold futures and options;
- (vii) gold trust receipts, structured notes, and gold-backed bonds;
- (viii) gold jewelry and objects of art; and in a related but different category,
- (ix) other precious metals such as silver, platinum, palladium, and rhodium.
- How and where gold is owned are often determined by the investor's motivations, concerns, amounts to invest, objectives, and personal circumstances.

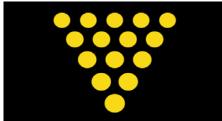
Source: The Art of Asset Allocation, Second Edition, by David M. Darst, CFA. McGraw-Hill, 2008; Morgan Stanley Smith Barney Investment Strategy Asset Class Review – Gold, September 14, 2009.

### **Bezant**

Gold coins were not commonly minted in early medieval Western Europe – silver and bronze being the currency of choice – but they did circulate there in small numbers, originating in the Mediterranean region. Byzantine gold coins, in particular, were highly prized, as were the later Islamic ones. These gold coins were commonly called bezants, taken from the word Byzantium, the Latinized form of the original Greek name (Βυζάντιον, Byzántion) of the capital, Constantinople.

Gold coinage was re-introduced to Europe in 1252 when the city of Florence began minting gold coins known as florins.

Typically gold coins were used when payments had some special ritual significance, or to show a sign of respect.



Duchy of Cornwall banner displaying the 15 bezants which has come to represent Cornwall. The duchy of Cornwall is one of two royal duchies in England, the other being the duchy of Lancaster.

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#### **OVERVIEW OF GOLD**

## Gold as an Asset Class

Advantages and Disadvantages

### **Advantages**

- Historically, gold has tended to retain its purchasing power compared to the cost of fundamental human needs such as food, shelter, and clothing.
- For centuries, the intrinsic value of gold has been widely accepted due to its rarity, beauty, durability, malleability, ductility, portability, divisibility, and anonymity.
- Gold has generally tended to exhibit negative or very low correlations of returns with almost all other asset classes.
- During many previous periods of excessive inflation, financial markets turmoil, deflationary shock, monetary system failure, and/or geographical instability, gold has been viewed as a form of insurance protection and refuge.
- Unlike many managed-paper currency systems, gold has a slowly changing and relatively inelastic supply; gold is considered to be the only monetary asset that is not the liability of another party.

### **Disadvantages**

 Although gold as an asset may be considered a conservative investment, some segments of the gold market are considered to include speculative and momentum-based traders, promoters, conspiracy theorists, and dogmatic participants whose views at times may lack objectivity.

- Physical gold has no yield, may trade in relatively low-volume and somewhat illiquid markets, is cumbersome to transport in large quantities, may incur costs of assay, custody, taxation, segregation, and insurance, and may be difficult to access in unsettled conditions.
- Due to their effectively embedded option component linked to changes in gold prices, gold mining shares have substantially leveraged exposure to gold-price movements, may at times be inaccurately valued, and may sometimes be difficult to assess by conventional methods employed by issuers, investors, and intermediaries, leading to unforeseen and possibly unfavorable consequences.
- For substantial intervals during eras of financial and geopolitical stability, gold prices may move within a mean-reverting band, influenced by: (i) the level of real interest rates; (ii) the demand for jewelry, industrial uses, exchange-traded funds and other investment vehicles, and identified bar and coin hoarding; and (iii) sources of supply, including new discoveries, production, forward sales and hedging by gold-mining companies, gold scrap recycling, and central bank purchases, sales, and gold lending activity.
- Gold may be subject to governmental influence and/or confiscation through taxation, the sealing of safety deposit boxes and other measures, the declaration of gold payment clauses as unenforceable, and the arbitrary fixing of gold prices.

### **OVERVIEW OF GOLD**

## Handy & Harman Gold Index Monthly and Annual Total Returns

Handy & Harman Gold Bullion Spot Price Index Monthly and Annual Total Returns (%) 1990-2010YTD

| Year | Jan.  | Feb.  | Mar.  | Apr.  | May   | Jun.  | Jul.  | Aug.  | Sept. | Oct.   | Nov.  | Dec.  | Full<br>Year |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|--------------|
| 2010 | -1.95 | 2.75  | 0.65  | 5.71  | 2.39  | N/A   | N/A   | N/A   | N/A   | N/A    | N/A   | N/A   | N/A          |
| 2009 | 5.72  | 3.53  | -3.73 | -3.63 | 10.44 | -4.20 | 0.48  | 1.01  | 4.98  | 4.44   | 13.05 | -6.44 | 25.78        |
| 2008 | 10.73 | 5.23  | -3.91 | -6.70 | 1.69  | 5.02  | -1.32 | -9.26 | 6.18  | -17.38 | 11.19 | 7.05  | 4.32         |
| 2007 | 2.93  | 2.11  | -0.37 | 2.30  | -2.64 | -1.30 | 2.31  | 0.98  | 10.57 | 6.26   | -0.76 | 6.41  | 31.92        |
| 2006 | 10.22 | -2.24 | 4.68  | 10.65 | 1.40  | -6.05 | 3.10  | -1.42 | -3.89 | 0.75   | 7.11  | -2.27 | 22.48        |
| 2005 | -3.09 | 3.15  | -1.83 | 1.92  | -4.88 | 5.47  | -1.85 | 0.99  | 9.23  | -0.53  | 5.29  | 4.11  | 18.46        |
| 2004 | -4.07 | -0.98 | 7.04  | -8.31 | 1.22  | 0.65  | -1.11 | 4.05  | 2.06  | 2.38   | 6.54  | -3.93 | 4.54         |
| 2003 | 6.58  | -5.46 | -3.63 | 0.57  | 7.32  | -4.26 | 2.53  | 5.88  | 3.30  | -0.45  | 2.52  | 5.23  | 20.85        |
| 2002 | 2.10  | 5.15  | 1.53  | 2.26  | 5.97  | -2.48 | -4.35 | 2.68  | 3.48  | -2.10  | 0.30  | 8.48  | 24.70        |
| 2001 | -2.33 | 0.83  | -3.37 | 2.11  | 1.65  | 1.16  | -1.74 | 2.67  | 7.36  | -4.90  | -1.17 | 0.36  | 2.10         |
| 2000 | -2.39 | 3.65  | -5.76 | -0.61 | -1.02 | 5.84  | -3.96 | 0.09  | -1.21 | -3.34  | 1.74  | 0.63  | -6.70        |
| 1999 | -1.14 | 0.58  | -2.65 | 2.56  | -6.28 | -2.83 | -2.07 | -0.31 | 17.35 | 0.03   | -2.59 | -0.38 | 0.54         |
| 1998 | 6.20  | -2.44 | 1.21  | 3.22  | -5.50 | 0.92  | -2.51 | -4.17 | 6.16  | -0.53  | 0.82  | -2.04 | 0.57         |
| 1997 | -6.37 | 3.79  | -2.65 | -2.56 | 1.60  | -3.20 | -2.45 | -0.31 | 2.07  | -6.23  | -4.62 | -3.35 | -22.21       |
| 1996 | 4.81  | -1.21 | -1.07 | -1.27 | -0.19 | -2.19 | 0.86  | 0.30  | -1.93 | 0.13   | -1.71 | -1.07 | -4.64        |
| 1995 | -1.96 | 0.40  | 4.14  | 1.72  | -3.62 | 0.72  | -0.96 | -0.26 | 0.43  | -0.35  | 1.35  | -0.22 | 1.19         |
| 1994 | -3.54 | 0.97  | 2.00  | -3.28 | -2.35 | 5.62  | -1.09 | 0.46  | 2.36  | -2.79  | -0.20 | -0.18 | -2.39        |
| 1993 | -0.86 | -0.86 | 3.11  | 4.88  | 6.53  | 0.26  | 6.16  | -7.52 | -4.32 | 3.94   | 0.38  | 5.62  | 17.54        |
| 1992 | 0.25  | -0.28 | -3.20 | -1.59 | 0.34  | 1.75  | 4.21  | -4.71 | 2.35  | -2.79  | -1.49 | -0.27 | -5.63        |
| 1991 | -6.81 | -0.90 | -1.94 | 0.59  | 0.74  | 2.21  | -1.49 | -4.26 | 2.16  | 0.72   | 2.70  | -3.79 | -10.07       |
| 1990 | 3.02  | -1.77 | -9.61 | -0.20 | -1.28 | -2.99 | 5.71  | 4.15  | 5.33  | -7.08  | 1.41  | 2.05  | -2.52        |

MorganStanley SmithBarney

**Source** Bloomberg. Data are as of June 10, 2010.

#### US President James Knox Polk on the discovery on gold in California, December 1848:

"The accounts of the abundance of gold in that territory are of such extraordinary character as would scarcely command belief were they not corroborated by authentic reports of officers in the public service."



Map of the United States, the British Provinces, Mexico &c. Showing a Plan of the Gold Region.
Drawn and engraved by J. M. Atwood.
New York: J. H. Colton, 1849.

MorganStanley SmithBarney

#### **OVERVIEW OF GOLD**

# Demand, Supply, and Global Gold Holdings

#### **Demand for Gold**

#### 2009 %Chg. % of (\$Bn) Metric Classification Tons (1) Total Value Jewelry 1,759 -20% 43% \$55 Identifiable Investment 1,323 12% 32% \$41 ETFs and Similar Products 617 92% 15% \$19 Industrial and Dental 373 -15% 9% \$12 Total 4,073 100% \$127

#### **Supply of Gold**

| Total                     | 4,025    |                   | 100%  | \$126  |
|---------------------------|----------|-------------------|-------|--------|
| Recycled Gold             | 1,668    | 27%               | 41%   | \$52   |
| Official Sector Sales (2) | 41       | -82%              | 1%    | \$1    |
| Total Mine Supply         | 2,316    | 13%               | 58%   | \$72   |
| Net Producer hedging      | (254)    |                   |       |        |
| Mining Output             | 2,570    | 7%                | 64%   | \$80   |
| Classification            | Tons (1) | yoy               | Total | Value  |
| _                         | Metric   | <b>2009</b> %Chg. | % of  | (\$Bn) |
| outplif or oom            |          |                   |       |        |

Source: "Gold Demand Trends," May 26 2010, World Gold Council.

#### Official Gold Holdings (as of March 2010)

| Rank | Country       | Gold<br>Holdings <sup>(</sup><br>(metric<br>tons) | Gold Holdings<br>(million troy<br>ounces) <sup>(1)</sup> | Value at<br>\$1100 per<br>troy ounce<br>(\$ billions) | Gold Holdings<br>as % of Total<br>Foreign<br>Reserves | Rank | Country        | Gold<br>Holdings<br>(metric<br>tons) | Gold<br>Holdings<br>(million troy<br>ounces) <sup>(1)</sup> | \$1100 per<br>troy ounce | Gold Holdings<br>as % of Total<br>Foreign<br>Reserves |
|------|---------------|---|--|---|---|------|----------------|--------------------------------------|---|--------------------------|---|
| 1    | United States | 8,133.5   | 261.5  | 287.6   | 67.9%   | 11   | ECB            | 536.9                                | 17.3  | 19.0                     | 25.6%   |
| 2    | Germany       | 3,407.6   | 109.6  | 120.5   | 64.0%   | 12   | Taiwan         | 423.6                                | 13.6  | 15.0                     | 3.9%  |
| 3    | IMF           | 3,217.3   | 103.4  | 113.8   | NA  | 13   | Portugal       | 382.5                                | 12.3  | 13.5                     | 83.7%   |
| 4    | Italy         | 2,451.8   | 78.8   | 86.7  | 62.3%   | 14   | India          | 357.7                                | 11.5  | 12.7                     | 4.1%  |
| 5    | France        | 2,435.4   | 78.3   | 86.1  | 63.3%   | 15   | Venezuela      | 356.4                                | 11.5  | 12.6                     | 34.7%   |
| 6    | China         | 1,054.1   | 33.9   | 37.3  | 1.5%  | 16   | United Kingdom | 310.3                                | 10.0  | 11.0                     | 14.7%   |
| 7    | Switzerland   | 1,040.1   | 33.4   | 36.8  | 28.0%   | 17   | Lebanon        | 286.8                                | 9.2   | 10.1                     | 25.7%   |
| 8    | Japan         | 765.2   | 24.6   | 27.1  | 2.3%  | 18   | Spain          | 281.6                                | 9.1   | 10.0                     | 33.7%   |
| 9    | Netherlands   | 612.5   | 19.7   | 21.7  | 50.1%   | 19   | Austria        | 280.0                                | 9.0   | 9.9                      | 50.9%   |
| 10   | Russia        | 591.1   | 19.0   | 20.9  | 4.6%  | 20   | Belgium        | 227.5                                | 7.3   | 8.0                      | 30.9%   |

Source: World Gold Council.

#### Notes

- 1. Conversion ratios: one metric ton equals 32,150 troy ounces; one troy ounce equals 1.0971 avoirdupois ounces.
- 2. The Official Sector category represents central banks and official international and regional organizations, and in the above table excludes metal lent to the market.

In 2009 on a global basis, India accounted for 25% of gold jewelry consumption, 19% of total net retail investment demand (coins and bars), and 17% of other industrial and decorative demand.

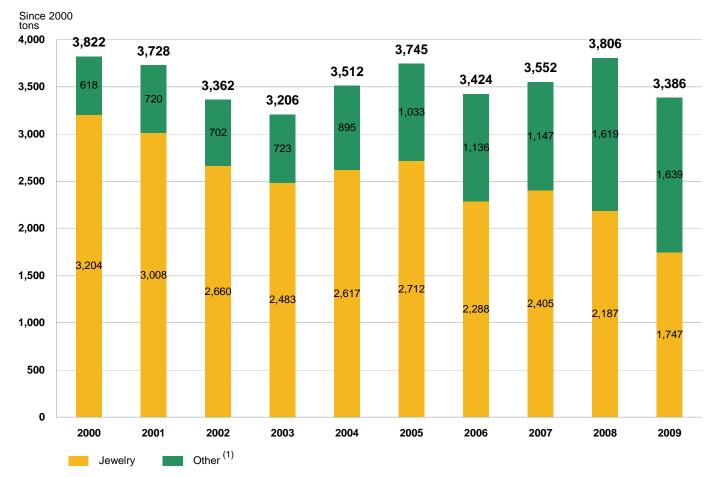
India was the strongest performing market in 1Q 2010 compared to 1Q 2009, as total consumer demand surged 698% to 194 tons.

Source "Gold Demand Trends," May 26, 2010, World Gold Council.

#### **OVERVIEW OF GOLD**

# Jewelry and Net Retail Investment in Gold

### Historical identifiable gold demand



(1) Other includes net retail investment, ETFs and similar products, industrial and dental Source "Gold Demand Trends," May 26, 2010, World Gold Council.

### **Gold Vending Machine**



The world's first gold dispensing vending machine was unveiled beneath the gold-coated ceilings of Abu Dhabi's Emirates Palace Hotel in May 2010.

The Gold To Go machine, which is covered in 24-carat gold, dispenses one-, five- and 10-gram bars as well as one-ounce bars of gold.

It tracks the gold price on fluctuating markets with a built-in website that receives information every 10 seconds, updating prices every 10 minutes.

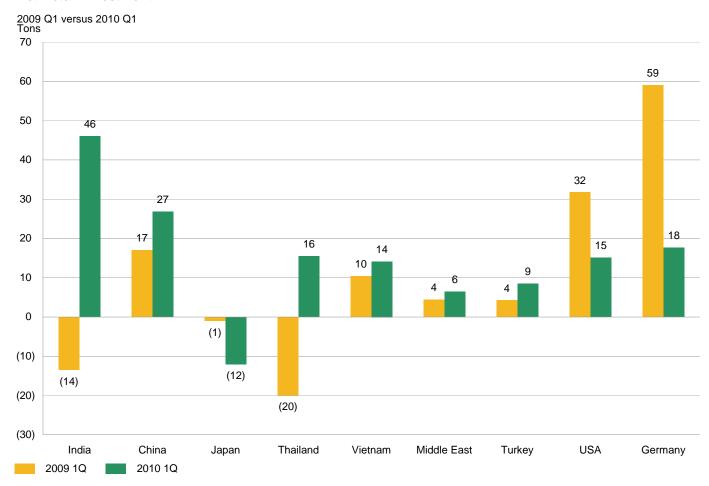
Source www.nydailynews.com.

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#### **OVERVIEW OF GOLD**

## Net Retail Investment in Gold

#### Net Retail Investment (1)



(1) Retail Investment. For the three bar, coin, and medallions categories, the Retail Investment category comprises individuals' purchases of coins and bars defined according to the standard adopted by the European Union for investment gold. Medallions of at least 99% purity, wires, and lumps sold in small quantities are also included. In practice, this category includes the initial sale of many coins destined ultimately to be considered as numismatic holdings rather than bullion. It excludes second hand coins and is measured as net purchases.

Source "Gold Demand Trends," World Gold Council.

## Above-Ground Stocks of Gold, Demand and Supply Flows

### Above-Ground Stocks (~160,000 tons)

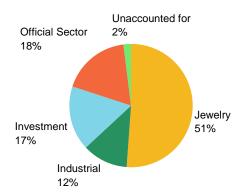
2008

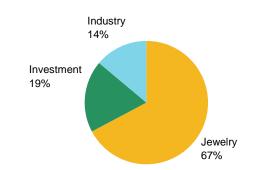
#### **Demand Flows**

5-year average (2004-2008)

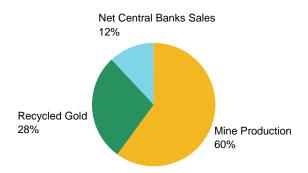
### **Supply Flows**

5-year average (2004-2008)





East Asia, the Indian sub-continent, and the Middle East accounted for 70% of world demand in 2008. Fully 55% of demand is attributable to just five countries: India, Italy, Turkey, the USA, and China, with each market driven by a different set of socioeconomic and cultural factors.



The comparatively long lead times in gold production, with new mines often taking up to 10 years to come on stream, mean that mining output is relatively inelastic and unable to react quickly to changes in the price outlook. The incentives promised by a sustained price rally, as experienced by gold over the 2002-2010 period, were not therefore easily or rapidly translated into increased production.

Source "Gold Demand Trends," World Gold Council.

### Average Annual Price Change of Gold Since 1935

| Year | % Change in<br>Price Y-o-Y | Year | % Change in<br>Price Y-o-Y |
|------|----------------------------|------|----------------------------|
| 1935 | 0.4%                       | 1973 | 66.7%                      |
| 1936 | 0.1%                       | 1974 | 58.1%                      |
| 1937 | -0.2%                      | 1975 | 4.5%                       |
| 1938 | 0.2%                       | 1976 | -22.5%                     |
| 1939 | -1.2%                      | 1977 | 18.5%                      |
| 1940 | -1.7%                      | 1978 | 30.8%                      |
| 1941 | 0.0%                       | 1979 | 58.2%                      |
| 1942 | 0.0%                       | 1980 | 101.0%                     |
| 1943 | 0.0%                       | 1981 | -25.2%                     |
| 1944 | 0.0%                       | 1982 | -18.3%                     |
| 1945 | 2.5%                       | 1983 | 12.8%                      |
| 1946 | 0.0%                       | 1984 | -14.9%                     |
| 1947 | 0.0%                       | 1985 | -12.2%                     |
| 1948 | 0.0%                       | 1986 | 16.1%                      |
| 1949 | -8.7%                      | 1987 | 21.5%                      |
| 1950 | 9.6%                       | 1988 | -2.2%                      |
| 1951 | 0.0%                       | 1989 | -12.8%                     |
| 1952 | -0.3%                      | 1990 | 0.7%                       |
| 1953 | 0.7%                       | 1991 | -5.6%                      |
| 1954 | 0.6%                       | 1992 | -5.1%                      |
| 1955 | 0.0%                       | 1993 | 4.6%                       |
| 1956 | -0.1%                      | 1994 | 6.7%                       |
| 1957 | -0.1%                      | 1995 | 0.0%                       |
| 1958 | 0.4%                       | 1996 | 0.9%                       |
| 1959 | 0.0%                       | 1997 | -14.6%                     |
| 1960 | 0.5%                       | 1998 | -11.1%                     |
| 1961 | -0.1%                      | 1999 | -5.3%                      |
| 1962 | -0.1%                      | 2000 | 0.1%                       |
| 1963 | -0.4%                      | 2001 | -0.4%                      |
| 1964 | 0.0%                       | 2002 | 11.6%                      |
| 1965 | 0.1%                       | 2003 | 17.2%                      |
| 1966 | 0.0%                       | 2004 | 4.5%                       |
| 1967 | -0.5%                      | 2005 | 5.2%                       |
| 1968 | 12.5%                      | 2006 | 36.6%                      |
| 1969 | 5.0%                       | 2007 | 7.5%                       |
| 1970 | -12.7%                     | 2008 | 20.4%                      |
| 1971 | 12.8%                      | 2009 | 22.9%                      |
| 1972 | 43.8%                      | 2010 | _                          |

Source: Bloomberg LLC.

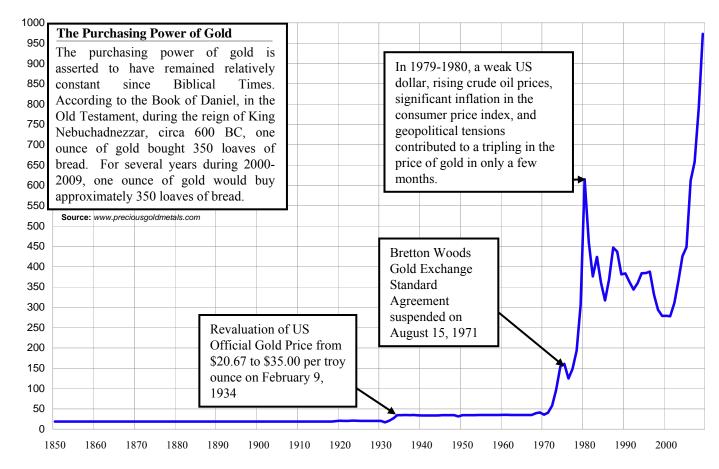
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#### **OVERVIEW OF GOLD**

## The Price of Gold

1850-2009

#### Average Annual Gold Price(1) (US Dollars per Troy Ounce)



Source: The Gold Institute, Bloomberg LLC.

#### **OVERVIEW OF GOLD**

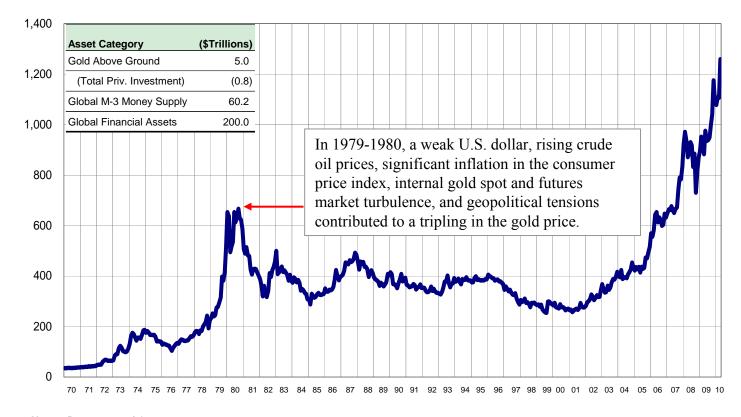
## The Price of Gold

1970-2010YTD

### Weekly Gold Price (\$U.S. per troy oz.) – 1970 Through 2010YTD







**Note:** Data are as of June 18, 2010. **Source:** Bloomberg.

Past performance is no guarantee of future results.

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**Key Price Drivers: Supply - Demand Inflation / Deflation Outlook Geopolitics Structure of the Monetary System** 

- The structure of the global demand for gold is very diverse. During the 5 years up to 2010, 68% of average annual demand came from jewelry, with more than 50% of this demand stemming from India, China, Turkey, and the Middle East Investment demand, on average, accounts for 20% where India, Europe, and the US play an important role. Finally, the remaining 12% average comes from industrial demand, especially from Japan.
- Consequently, looking at the impact that variables such as the money supply, inflation, or the velocity of money have on the price of gold, while focusing primarily on the US misses the whole picture. It is important to study the behavior of gold prices in the context of global economics and to take into account the many forces and countries that shape its performance.

Source: World Gold Council.

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#### **OVERVIEW OF GOLD**

## Gold Demand Outlook for 2010

Comments on First Quarter Data

- The *World Gold Council* predicted that demand for gold would be strong during 2010, driven by growing demand for jewelry in China and India as well as an increase in European and US investment in the context of continued economic instability, sovereign risk, and the threat of a double dip recession.
- Demand in India and China was forecast to grow driven by jewelry demand, in spite of high local currency gold prices. In Q1 2010, India was the strongest performing market as total consumer demand surged 698% to 193.5 tons. In China, demand proved resilient; demand increased 11% in Q1 2010 to 105.2 tons.
- While the volume of total identifiable gold demand in Q1 2010 was down 25% versus Q1 2009 levels at 760.2 tons, in US dollar value terms, the decline was a more moderate 9%.
- Consumers appeared more comfortable with a higher local price environment, borne out by demand in non-western markets where jewelry demand increased 43%.
- Indian jewelry demand rose 291% to 147.5 tons; continued strong demand came from China, and there were signs of demand recovery in Turkey and the Middle East.
- Net retail investment demand, which includes retail bar and coin demand, was up 26% versus the first quarter of 2009, at 182.5 tons.
- Industrial and dental demand was up 31% at 103.2 tons, driven by a solid recovery in the electronics and other industrial sectors owing to gradually improving economic conditions.

Source: World Gold Council. Data are as of May 26, 2010.

• "As of May 2010, European gold investment demand has been exceptionally strong, especially from German and Swiss investors. This is mainly attributable to concern over public debt levels in the Eurozone and the potential inflationary impact of the European Central Bank's (ECB) announcement of a US\$1 trillion rescue package and plans to purchase Eurozone government bonds to address sovereign debt worries."

- Aram Shishmanian, CEO, World Gold Council

Source: World Gold Council

• As of 2010, China was the world's biggest producer and the second largest consumer of gold, but it had only 4% of total world's ore reserves, with total basic reserves amounting to 1,900 tons, according to the US Geological Survey (USGS).

**Source:** US Geological Survey, Mineral Commodity Summaries Report, 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 may run out of ore in six years.

Source: Bloomberg, December 6, 2007.

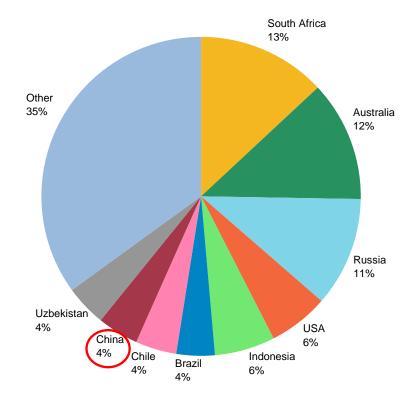
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#### **OVERVIEW OF GOLD**

## China and Gold Ore Reserves

#### **Gold Ore Reserves by Country**

2009



Source: World Gold Council, US Geological Survey, January 2010.

## **Four Pillars of Destiny**

The ancient Chinese devised a method of reading the life of a person from his birth Year, Month, Day, and Hour. This information is displayed in the form of four columns each consisting of two characters. Each column is called a Pillar. The four pillars together contain eight characters. This method of Life Reading is called "The Four Pillars of Destiny" or simply "The Eight Characters".

The ancient Chinese used combinations of two sets of words to denote time. A year is represented by two words. So is a month, a day, or an hour.

The Chinese use the same Chinese character for gold and metal.

The first set of words is the set of the "Ten Heavenly Stems". They are the yin and yang components of the Five Elements: Yang Wood, Yin Wood, Yang Fire, Yin Fire, Yang Earth, Yin Earth, Yang Metal, Yin Metal, Yang Water, Yin Water.

The second set of words is the set of the "Twelve Earthly Branches". They are more popularly represented by the twelve animals of the Zodiac: Rat, Ox, Tiger, Rabbit, Dragon, Snake, Horse, Goat, Monkey, Rooster, Dog, Pig.

Source www.astro-fengshui.com, www.chineseculture.about.com

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# Origins of Gold Demand In China

- Gold is a symbol of wealth in Chinese culture. In the Chinese tradition, gold is given as a gift on birthdays, Mother's Day, for births, and at the Chinese New Year. Gold also serves as part of Matrimonial jewelry which forms a major part of total jewelry demand in China.
- According to the author of "*Ages of Gold*," Timothy Green, the Chinese have long been fascinated by gold. In 23 AD, Emperor Wang Mang, founder of the Xin Dynasty, in his treasury, held the world's largest reserve of gold, approximately 155 tons.
- 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, with silk also used to settle transactions. Gold was used among the nobility, for settlements among different factions in China, and for hoarding wealth.
- Prior to 2002, the gold market in China was tightly regulated from production through 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 People's Bank of China to export gold and imports of gold jewelry were subject to a 60% import tariff (a 40% reduction from 100% in 1996).
- From 1996, China hastened the reform and liberalization process. It was not until October 2002 that the Shanghai Gold Exchange was established to replace the PBoC's gold purchase and allocation system.
- The China Gold Association (CGA) was established in November 2001 and plays an active role in China's gold industry. The 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.

Source: World Gold Council, US Geological Survey, January 2010.

## **OVERVIEW OF GOLD**

# Long-Term Outlook for the Chinese Gold Market



Territorial Map of China

- Chinese gold demand has increased by 106% from 2002 to an estimated 443 tons in 2009, an average of 8% per annum during the same period.
- Over time, significant potential for growth exists in Chinese gold jewelry demand, representing the vast majority (78%) of the domestic gold market.
- Net retail gold investment continues to develop in China. Investors seeking to protect their wealth, and institutional and retail investors looking to manage portfolio risk, have been increasingly turning to gold.
- The People's Bank of China has also played a supportive role on the demand side. The motivations of the People's Bank of China for owning gold are the same as the reasons why individuals want to own gold namely its diversification properties, as insurance against unexpected events, and due to gold's past ability to outperform during crises.
- In 2007, China overtook South Africa to become the world's leading gold producer. China has continued to increase production, increasing output for ten straight years and reaching a new record in 2009 of 300 tons (9.65 million troy ounces), according to the US Geological Survey.
- Assuming that long term gold demand growth is in line with China's supply growth target of 5% per annum (as set out in the country's Eleventh Five Year Plan), China could experience total demand in 2025 at double 2010 levels.



Flag of the People's Republic Of China

Source: World Gold Council, US Geological Survey, January 2010.

#### **OVERVIEW OF GOLD**

## China, India, and Gold

## **Golden Dragon**



· The dragon, especially yellow or golden dragons with five claws on each foot, was a symbol of the emperor in many Chinese dynasties.

## **Tanjore Painting**



- It is an important form of classical South Indian painting native to the town of Thanjavur in Tamil Nadu. The art form dates back to about 1600 AD.
- The process of making a Tanjore painting involves many stages.
- High quality gold foil is used to ensure that the painting lasts for generations. They generally appreciate in value and are considered collectibles.

- China is the world's largest producer of gold and the second-largest consumer behind India, based on data from the World Gold Council. Its annual gold output is about 300 metric tons (9.6 million troy ounces), and it consumes about 400 metric tons (12.9 million troy ounces) on an annual basis. Private holdings of gold by Chinese individuals have been estimated at more than 3,000 metric tons (96.5 million troy ounces).
- 2. In April 2009, gold prices rallied when China suddenly acknowledged that its gold reserves had risen by 454 metric tons (14.6 million troy ounces) since 2003, to 1.054 tons (33.9 million troy ounces).
- 3. "Gold is not a bad asset, but currently a few factors limit our ability to increase foreign-exchange investment in gold," said Yi Gang, director of China's State Administration of Foreign Exchange (SAFE) and a Vice Governor of the People's Republic of China.
- 4. In April 2010, the World Gold Council signed a letter of understanding to cooperate with the Industrial and Commercial Bank of China to expand awareness of and investment in the gold market within China. The Industrial and Commercial Bank of China has over 200 million individual clients. over 3.5 million corporate customers, and more than 16,000 offices.
- 5. In December 2009, Ji Xiaonan, Head of China's Assets Supervision and Administration Commission, recommended that China increase its gold reserves to 6,000 metric tons (192.9 million troy ounces) within three to five years, and possibly to 10,000 metric tons (321.5 million troy ounces) in eight to ten years.
- 6. Unless new discoveries are located, US Geological Survey data indicate that China's reserves of economically-recoverable gold will be virtually exhausted by approximately 2015.
- 1. Lacking easy or efficient access to modern financial services, many rural private citizens in India favor gold over securities or bank deposits. Indian individuals are estimated to own 20,000 metric tons (643 million troy ounces) of gold, approximately two-thirds of the gold holdings of the world's central banks and approximately one-eighth of all the gold mined thus far in history.
- 2. India's post office sells 24-carat gold coins, in sizes as small as 0.5 grams, to savers wary of fiat currencies or mutual funds.
- 3. On November 3, 2009, the Reserve Bank of India announced that it had bought 200 metric tons (6.4 million troy ounces) of gold from the International Monetary Fund.

## **Goldilocks Economy**

A Goldilocks Economy is a not too hot or cold economy, sustaining moderate economic growth and low levels of inflation, allowing for a market-friendly monetary policy. The name comes from the children's story *The Three Bears*. The first use of this phrase is credited to David Shulman of Salomon Brothers who wrote "*The Goldilocks Economy: Keeping the Bears at Bay*," in March 1992.

## The Maple Leaf Coin



One of the world's largest coins, weighing 100 kilograms (220 pounds), was auctioned on Friday, June 25, 2010, for \$4.03 million. Produced by the Royal Canadian Mint in 2007, the gold coin is approximately 30 inches in diameter and 1.2 inches thick. It was one of the only five made, each with a face value of one million Canadian dollars.

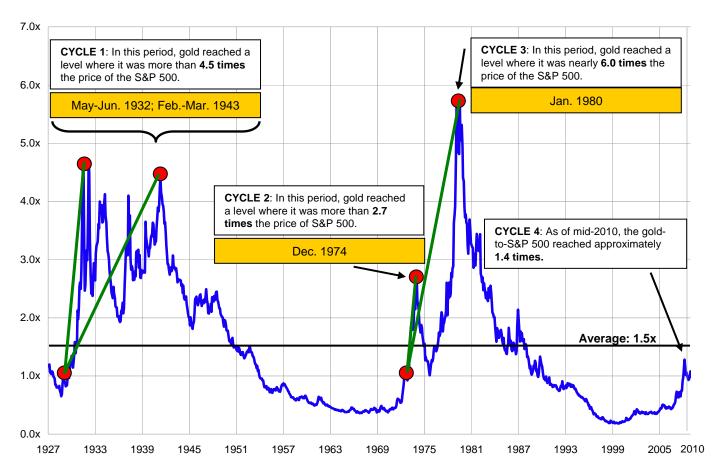
**Source:** "Coin Sale Due; It's a Big One," Flemming Hansen, The Wall Street Journal, June 24, 2010.

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#### **OVERVIEW OF GOLD**

## Gold Price Relative to the S&P 500

## Gold Price Relative to the S&P 500



Sources: Bloomberg LLC, wjbcapital.com.

- Some investors have turned to gold during actual or feared periods of acute inflation, deflation, geopolitical instability, or severe turbulence in capital markets.
- In the late 1920s, the DJIA had increased by six times relative to the increase in the price of gold; by the mid-1960s, the DJIA had increased by almost ten times relative to the increase in the price of gold; in the late 1990s, the DJIA had increased by fourteen times relative to the increase in the price of gold; as of December 2009, the ratio of the increase in the DJIA relative to the increase in the price of gold was 3.3 times.

## **Fort Knox Bullion Depository**

The Fort Knox Bullion Depository, located 30 miles from Louisville, Kentucky, is the storage facility for a large portion of the United States' gold reserves. The Depository was completed in 1936, at a cost of \$560,000.

Within the building is a two-level steel and concrete vault. The vault door weighs more than 20 tons and no one person is entrusted with the combination to the vault door lock.

The gold stored in the Depository is in the form of standard mint gold bars and coin gold bars fabricated from the melting of gold coins.

As of 2009, the gold holdings at the Fort Knox Depository equaled approximately 147 million troy ounces. The peak level of gold holdings at the Fort Knox Depository was 649.6 million troy ounces, on December 31, 1941.

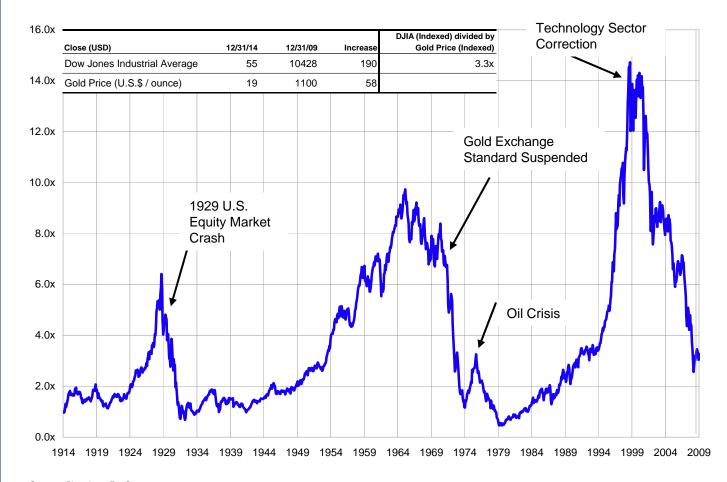
**Sources:** www.ustreasury.gov; www.usmint.gov; www.globalsecurity.org.

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#### **OVERVIEW OF GOLD**

# Gold Prices During Periods of Uncertainty

## **DJIA (Indexed) Divided by Gold Price Per Ounce (Indexed)**



Sources: Bloomberg, FactSet.

## **Scythian Gold**

The Scythians flourished more than 2,500 years ago in what is present-day Ukraine and were one of the great warrior cultures that dominated the steppes for centuries.

They originated in the central Asian steppes sometime in the early first millennium BC. After migrating into what is now Ukraine, they flourished from the seventh to the third centuries, BC, over a vast expanse of the steppes stretching from the Danube east into Russia.

Invincible for nearly four centuries, the Scythians were a people of great military skill and unrelenting ferocity. They were also enthusiastic patrons of the arts, and left behind an extraordinary legacy of conquest and lavish artifacts.







Gold Scythian helmet, circa 4th-century BC

Source: silkroad.com.

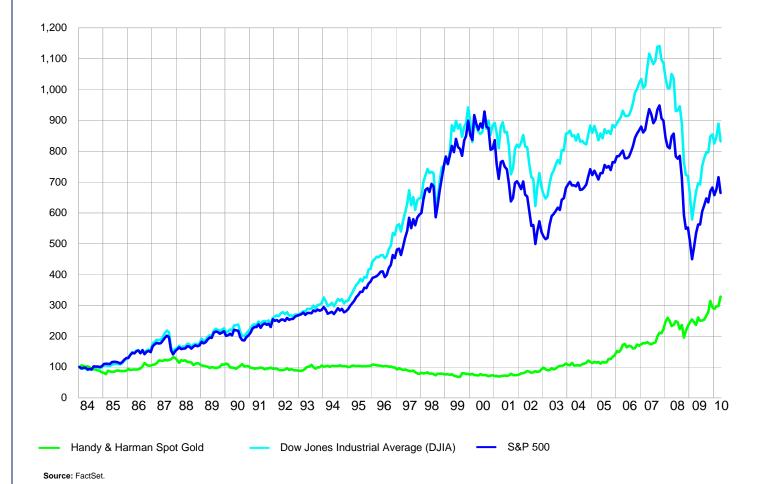
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## **OVERVIEW OF GOLD**

## Gold Price Versus the DJIA and the S&P 500

1984-2010YTD<sup>(1)</sup>

## Indexed Performance Since 1984 (January 1, 1984=100)



Note:

1. Data are as of June 1, 2010.

## **Gold in Ancient Egypt**

In early Egypt, gold was considered the "skin of the gods," and only kings were allowed to wear the sacred metal. Because of gold's religious significance, it was used to adorn temples and the pyramids, and in the creation and decoration of funerary art — the most famous example of which is the golden burial mask of Tutankhamun (shown on the cover page of this document). The gold mask of Tutankhamun has come to symbolize the wealth and treasures of the ancient Egyptian civilizations.

Tutankhamun ("King Tut") ruled Egypt between 1334 and 1323 BC; the young "boy pharaoh" was the 12th ruler of Egypt's 18th Dynasty. Tutankhamun followed the pharaonic lineage of Akhenaten and the name Tutankhamun means "living image of Aten." Scientific examinations suggest that Tutankhamun died at the age of 18, due to unknown causes.

The discovery of Tutankhamun's tomb in Western Thebes on November 4, 1922 by Howard Carter is considered one of the greatest archaeological finds of the twentieth century.

Source: www.wikipedia.org.

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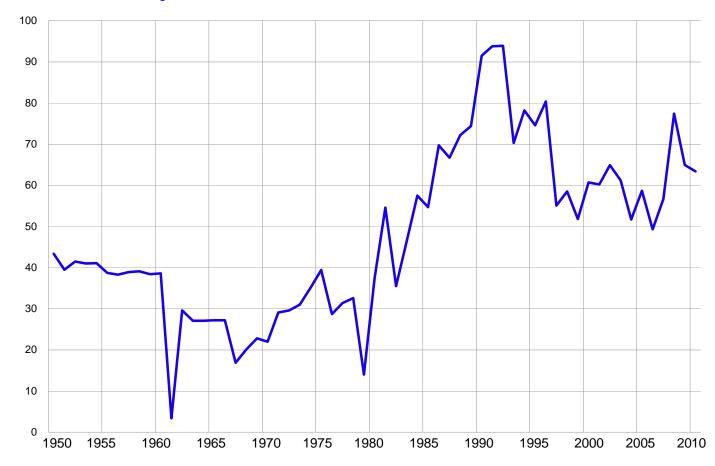
## **OVERVIEW OF GOLD**

## Ratio of the Price of Gold to the Price of Silver

1950-2010YTD<sup>(1)</sup>

## Ratio of the Spot Price of Gold to the Spot Price of Silver (1950-2010YTD)

Based on Annual Average Prices



Sources: The Gold Institute; The Silver Institute; Handy & Harman.

#### Note:





## The London Gold Fixing Process

The London gold fixing has been one of the oldest rituals in the City of London and has been a constant in the gold industry since the gold price was first fixed. The participants at the first fixing on Friday, September 12, 1919 were from NM Rothschild (which chaired the meeting and every subsequent one), Mocatta & Goldsmid, Pixley & Abell, Samuel Montagu & Co., and Sharps Wilkins.

The London gold fixing took place at 10:30 a.m. and 3:00 p.m. each day at NM Rothschild's offices in St. Swithin's Lane. Five individuals conferred on their telephones for several minutes, and then lowered tiny Union Jack flags sitting on their desks.

The chair suggests an opening price, which is reported by the representatives to their dealing rooms. The chair then asks who wants to buy and who wants to sell and how many 400-ounce bars they wish to trade. If the quantities fail to balance at the opening price, the chair suggests a higher, or lower price, until a balance is achieved. Then the chair announces the price to be fixed. The dealing rooms can alter instructions to their representatives at any time during the proceedings. A representative signals a change in declared interest through a raised flag. The chair cannot declare the gold price fixed until all the flags are down.

On April 15, 2004, NM Rothschild announced its intention to exit the gold business after two centuries of trading and tradition.

Sources: "Rothschild Turns its Back on the Gold"

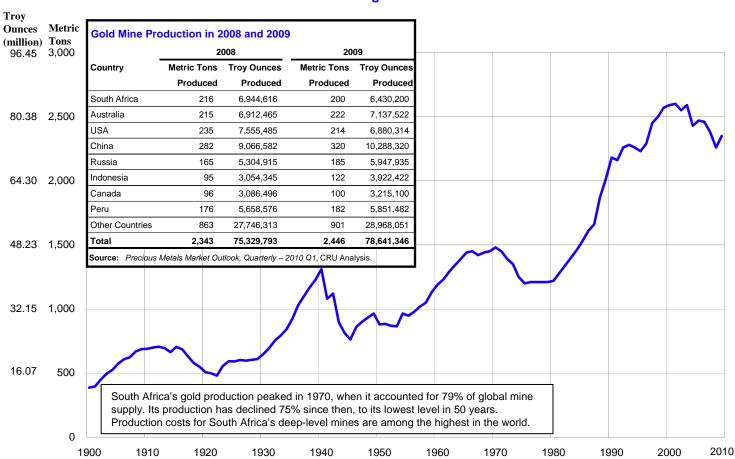
"Fichtschild Turns its Back on the Gold Market after Two Centuries of Trading," Financial Times, April 15, 2004; Gold Information Network; "Pricing Gold but No Longer Standing on British Tradition," The New York Times, May 6, 2004.

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#### **OVERVIEW OF GOLD**

## Annual World Production of Gold Since 1900

## **Annual World Production of Gold From 1900 Through 2009**



Source: US Geological Survey

#### Note

<sup>1.</sup> Conversion ratios: one metric ton equals 32,151 troy ounces; one troy ounce equals 1.0971 avoirdupois ounces.

## The Gold Vault in the Federal Reserve Bank of New York

The Federal Reserve Bank of New York is one of 12 regional Reserve Banks in the Federal Reserve System. It houses significant gold reserves, which are located 80 feet underground. The Federal Reserve Bank of New York began storing gold during the major twentieth-century periods of armed conflict (in 1914-1918 and in 1939-1945) when many countries wanted their gold reserves held away from military action.

Only a small percentage of the gold in Federal Reserve Bank of New York stores belongs to the United States. The approximately 60 account holders include countries, international, and regional organizations.

Sources: www.encyclopedia.com; www.ny.frb.org.

# The Origin of the "troy" and "avoirdupois" Weight Systems

The troy system used to weigh many precious metals is named after Troyes, France. Troyes was a commercial center in the Middle Ages, and the city was noted for its annual fairs, during which standard weights and measures were set for all of Europe. The avoirdupois system takes its name from the French phrase "avoir du pois," meaning goods of weight.

Source: www.ny.frb.org.

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#### **OVERVIEW OF GOLD**

# Global Supply of and Fabrication Demand for Gold

2005-2014E

#### World Gold Supply & Demand (metric tons)

| Supply                   | 2005  | 2006  | 2007  | 2008  | 2009  | 2005-2009<br>5-Year<br>Average | 2005-2009<br>Average %<br>of Total | 2010E | 2011E | 2012E | 2013E | 2014E |
|--------------------------|-------|-------|-------|-------|-------|--------------------------------|------------------------------------|-------|-------|-------|-------|-------|
| Mine Production          | 2,445 | 2,430 | 2,417 | 2,343 | 2,428 | 2,413                          | 70%                                | 2,483 | 2,546 | 2,571 | 2,607 | 2,618 |
| Net Official Sales       | 593   | 365   | 495   | 174   | (470) | 231                            | 7%                                 | (60)  | (55)  | (60)  | (40)  | (40)  |
| Scrap Supply             | 900   | 1,129 | 960   | 1,220 | 1,400 | 1,122                          | 32%                                | 1,300 | 1,200 | 1,000 | 990   | 970   |
| Producer Net De-Hedging  | (142) | (395) | (444) | (250) | (264) | (299)                          | (9%)                               | (65)  | (60)  | (50)  | (40)  | (30)  |
| Total Supply             | 3,796 | 3,529 | 3,428 | 3,487 | 3,094 | 3,467                          | 100%                               | 3,658 | 3,631 | 3,461 | 3,517 | 3,518 |
| Fabrication Demand       |       |       |       |       |       |                                |                                    |       |       |       |       |       |
| Jewelry                  | 2,700 | 2,285 | 2,401 | 2,180 | 1,650 | 2,243                          | 78%                                | 1,700 | 1,740 | 1,830 | 1,950 | 2,000 |
| Electronics              | 285   | 308   | 311   | 280   | 255   | 288                            | 10%                                | 270   | 280   | 290   | 300   | 308   |
| Coins/Medallions         | 150   | 188   | 210   | 260   | 262   | 214                            | 7%                                 | 270   | 250   | 220   | 230   | 230   |
| Other                    | 91    | 93    | 87    | 82    | 80    | 87                             | 3%                                 | 78    | 81    | 85    | 89    | 90    |
| Dental                   | 61    | 58    | 54    | 53    | 51    | 55                             | 2%                                 | 49    | 48    | 47    | 46    | 45    |
| Total Fabrication Demand | 3,287 | 2,932 | 3,063 | 2,855 | 2,298 | 2,887                          | 100%                               | 2,367 | 2,399 | 2,472 | 2,615 | 2,673 |

Sources: Precious Metals Market Outlook, Quarterly – 2010 Q1, CRU Analysis.

## The Prohibition of Private Gold Ownership in the United States (1933-1974)

In 1933, United States President Franklin D. Roosevelt imposed a ban on US citizens' buying, selling, or owning gold. A series of Executive Orders prohibited the private ownership of gold, ending its use as a form of tender. One of these Executive Orders, signed on April 5, 1933, established policing powers which ultimately led to the confiscation of gold owned by private citizens. This ban was later repealed on December 31, 1974. Further details are contained in **Section 7** of this document.

Source: www.encyclopedia.com.

- Gold share prices may perform differently from each other and from the price of gold itself
- Gold shares have tended to exhibit greater volatility than the price of the underlying metal because of the companies' inherent operating leverage.

## Gold and the Inca Empire

At the peak of the Inca Empire, circa 1500, the city of Cuzco (located in modern day Peru) represented the seat of Inca wealth and power.

It was prohibited to remove gold and other precious metals from Cuzco.

Gold was esteemed by the Incas and they referred to it as "the sweat of the sun." Gold was used to create idols, goblets, and ornaments for the Incas' temples, the king, and members of the nobility.

#### Gold goblet and idol from the Inca Empire





Source: geocities.com.

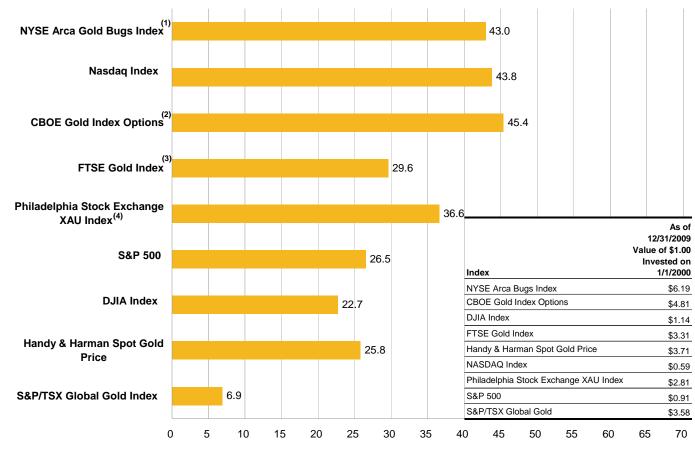
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#### **OVERVIEW OF GOLD**

## Investment Performance of Gold Share Indices

## 2009 Performance

% Change



Sources: Bloomberg LLC, Morgan Stanley Smith Barney Investment Strategy

#### Note:

- 1. A modified equal-dollar weighted index composed of 16 companies; for information on the constituents of this index, please see www.amex.com.
- 2. An equal-dollar weighted options index composed of 10 companies; for information on the constituents of this index, please see www.cboe.com.
- 3. A market capitalization weighted index of primarily South African gold shares; for information on the constituents of this index, please see www.ftse.com.
- The Philadelphia Stock Exchange Gold and Silver Index is a market capitalization weighted index of 12 companies; for information on the constituents of this index, please see www.phix.com.

#### The First Gold Coins

The first gold coins were struck by King Croesus in Lydia during his reign from 560 to 547 BC. Gold coins have served as legal tender for long periods and in many locations since that time.

Source: World Gold Council.

- Investors may purchase physical gold in the form of bars or coins.
- The value of gold coins tends to be affected by two main factors: (i) the amount and purity of the gold content; and (ii) details concerning the specific minting.
- The value of gold bars tends to be determined primarily by weight.
- Gold coins may be purchased from specialized dealers, while gold bars may be purchased in public trading markets.
- Sources of information include:
  - www.austrian-mint.com
  - www.gold.org
  - www.gold-eagle.com
  - www.goldinfo.net
  - www.goldinstitute.com
  - www.handyharman.com
  - www.perthmint.com
  - www.royalmint.com
  - www.thebulliondesk.com
  - www.the-privateer.com
  - www.usmint.gov

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## **OVERVIEW OF GOLD**

# Physical Gold

## **Selected Types of Gold Coins and Gold Bars**

|  | Name                             | Description  |
|--|----------------------------------|--|
|  | Coins                            |  |
|  | American Eagle                   | A 22-carat gold coin carrying an Eagle's head issued by the United States Mint in sizes of one ounce, $1/2$ ounce, and $1/10$ ounce, with face values of \$50, \$25, \$10, and \$5, respectively.  |
|  | Australian Nugget                | A 24-carat gold coin issued by GoldCorp of Australia in sizes of one kilogram, 10 ounces, 2 ounces, one ounce, $\frac{1}{2}$ ounce, $\frac{1}{4}$ ounce, $\frac{1}{10}$ ounce, and $\frac{1}{20}$ ounce.   |
|  | Britannia                        | A 22-carat legal tender gold coin issued by the Royal Mint in Great Britain in sizes of one ounce, $^1/_2$ ounce, $^1/_4$ ounce, and $^1/_{10}$ ounce.   |
|  | Maple Leaf                       | A 24-carat gold coin issued by the Royal Canadian Mint issued in sizes of one ounce, $\frac{1}{2}$ ounce, $\frac{1}{4}$ ounce, and $\frac{1}{10}$ ounce.   |
|  | Philharmoniker                   | A one ounce legal tender 24-carat gold coin produced by the Austrian mint. The coin bears a number of musical instruments to honor the Vienna Philharmonic Orchestra, after which it is named.   |
|  | Krugerrand<br>)                  | A 22-carat gold bullion coin produced and distributed by Rand Refinery Limited, and minted by the South African Mint. Available in sizes of one ounce, $^1/_2$ ounce, $^1/_4$ ounce, and $^1/_{10}$ ounce.   |
|  | Chinese Panda                    | Panda gold coins are struck at the Shenzhen Guobao Mint in sizes of 1 ounce, $^{1}/_{2}$ ounce, $^{1}/_{4}$ ounce, and $^{1}/_{10}$ ounce, and the $^{1}/_{20}$ ounce  |
|  | Bars and Bullion                 |  |
| 901.D<br>902.0<br>10008<br>900001  | Kilobar                          | The world's most widely traded small gold bar, weighing one kilogram. This bar is popular among investors and fabricators as it is normally traded at an extremely low premium to the prevailing value of its gold content.  |
| COLOT AVERAGE AND AVERAGE AVER | 400-Ounce Bar                    | A bar that weighs between 350 ounces and 430 ounces with minimum gold purity of 99.5%. Central banks normally hold gold in the form of these bars and are believed to hold 2.5 million of them.  |
|  | Gold Bullion Bars by<br>Refinery | Gold bullion bars in fineness from 0.9950 to 0.9999 gold are available in sizes of 1 troy ounce, 10 ounces, 1 kilogram, 100 ounces, and 400 ounces from US refineries such as PAMP (Produits Artistiques de Métaux Précieux S.A.), Credit Suisse, and Johnson Matthey. |
|  | Source: World Gold Council       | A'   |

Source: World Gold Council.

## Silver

by Walter de la Mare (1873-1956) Slowly, silently, now the moon

Walks the night in her silver shoon; This way, and that, she peers, and sees Silver fruit upon silver trees; One by one the casements catch Her beams beneath the silvery thatch; Couched in his kennel, like a log, With paws of silver sleeps the dog; From their shadowy cope the white beats peep

Of doves in a silver-feathered sleep; A harvest mouse goes scampering by, With silver claws and a silver eye; And moveless fish in the water gleam, By silver reeds in a silver stream.

Source: Walter de la Mare Society.



## Section 4

# **Overview of Silver**





Based in Boston, Paul Revere is one of the most renowned figures in American history. On April 18, 1775, Paul Revere made his famous midnight ride to warn of the British invasion. In his professional life, Revere was a craftsman and silversmith. According to historical records, Paul Revere's silver shop produced over 5,000 items from 1761 to 1797. Objects produced by the shop are marked with the trademark "REVERE."

Source: www.paulreverehouse.org.



## The Morgan Silver Dollar

The first silver dollars were struck on March 11, 1878, and the U.S. government minted nearly 600 million Morgan Silver Dollars from 1878-1921. The coin was designed by George T. Morgan, who served as special engraver for the Philadelphia mint. The design features Lady Liberty on the front while the reverse depicts a rather thin eagle — resulting in the coin being popularly referred to as a "buzzard dollar."

# Selected Excerpts from *Roughing It*, by Mark Twain (1835-1910)

My brother had just been appointed Secretary of Nevada Territory – an office of such majesty that it concentrated in itself the duties and dignities of Treasurer, Comptroller, Secretary of State, and Acting Governor in the Governor's absence. A salary of eighteen hundred dollars a year and the title of "Mr. Secretary," gave to the great position an air of wild and imposing grandeur. I was young and ignorant, and I envied my brother. I coveted his distinction and his financial splendor, but particularly and especially the long, strange journey he was going to make, and the curious new world he was going to explore. He was going to travel! I never had been away from home, and that word "travel" had a seductive charm for me. Pretty soon he would be hundreds and hundreds of miles away on the great plains and deserts, and among the mountains of the Far West, and would see buffaloes and Indians, and prairie dogs, and antelopes, and have all kinds of adventures, and maybe get hanged or scalped, and have ever such a fine time, and write home and tell us all about it, and be a hero. And he would see the gold mines and the silver mines, and maybe go about of an afternoon when his work was done, and pick up two or three pailfuls of shining slugs, and nuggets of gold and silver on the hillside. And by and by he would become very rich, and return home by sea, and be able to talk as calmly about San Francisco and the ocean, and "the isthmus" as if it was nothing of any consequence to have seen those marvels face to face. What I suffered in contemplating his happiness, pen cannot describe. And so, when he offered me, in cold blood, the sublime position of private secretary under him, it appeared to me that the heavens and the earth passed away, and the firmament was rolled together as a scroll! I had nothing more to desire. My contentment was complete.

I dreamed all night about Indians, deserts, and silver bars, and in due time, next day, we took shipping at the St. Louis wharf on board a steamboat bound up the Missouri River.

Source: www.mtwain.com

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#### **OVERVIEW OF SILVER**

# History and Background of Silver

- For centuries, silver has attracted human interest, and the remains of several ancient civilizations include plentiful amounts of silver jewelry, sacred religious items, and other artifacts shaped from the metal.
- Significant improvements in technology and the discovery of the New World in 1492 led to a large increase in mined silver, particularly in Latin America in the 16<sup>th</sup>, 17<sup>th</sup>, and 18<sup>th</sup> centuries.
- From 1500 through 1800, Bolivia, Peru, and Mexico accounted for over 85 percent of the world's silver production and trade. The remaining production in the period was derived largely from Germany, Hungary, and Russia, with lesser amounts from other European countries, Chile, and Japan.
- After 1850, several other countries increased production, particularly the United States after the discovery of the 1858-1859 Comstock Lode in Nevada. Global silver production continued to grow, increasing from 40 to 80 million troy ounces annually by the 1870s.
- The period from 1876 to 1920 witnessed an upsurge in technological innovation and the exploitation of new ore-bearing regions. Total annual production in the 1875-1900 quarter-century quadrupled over the average of the first 75 years, to nearly 120 million troy ounces per annum.
- Several mining advances in the twentieth century have led to increased global silver production. These new extraction techniques have been of critical importance to the silver supply, since many of the high-grade ore bodies throughout the world were largely depleted by the end of the 19th century.
- Silver is sought as a valuable and practical industrial commodity; the largest users of silver are the jewelry, electronics, and photography industries.

Source: The Silver Institute.

#### **Annual Change in the Price of Silver**

#### 1970 - 2010YTD

| 1970 - 2010110 |                            |
|----------------|----------------------------|
| Year           | % Change in Price<br>Y-o-Y |
| 1970           | -10.9%                     |
| 1971           | -15.9%                     |
| 1972           | 47.8%                      |
| 1973           | 59.8%                      |
| 1974           | 34.0%                      |
| 1975           | -4.6%                      |
| 1976           | 5.0%                       |
| 1977           | 9.1%                       |
| 1978           | 27.0%                      |
| 1979           | 361.3%                     |
| 1980           | -44.1%                     |
| 1981           | -47.3%                     |
| 1982           | 32.1%                      |
| 1983           | -17.9%                     |
| 1984           | -28.9%                     |
| 1985           | -8.3%                      |
| 1986           | -7.9%                      |
| 1987           | 24.8%                      |
| 1988           | -10.1%                     |
| 1989           | -14.0%                     |
| 1990           | -19.4%                     |
| 1991           | -7.7%                      |
| 1992           | -4.8%                      |
| 1993           | 38.4%                      |
| 1994           | -4.1%                      |
| 1995           | 4.9%                       |
| 1996           | -7.4%                      |
| 1997           | 25.7%                      |
| 1998           | -15.1%                     |
| 1999           | 6.8%                       |
| 2000           | -14.8%                     |
| 2001           | 1.2%                       |
| 2002           | 1.6%                       |
| 2003           | 25.7%                      |
| 2004           | 14.8%                      |
| 2005           | 29.2%                      |
| 2006           | 46.4%                      |
| 2007           | 14.7%                      |
| 2008           | -23.0%                     |
| 2009           | 48.2%                      |
| 2010YTD        | 7.8%                       |

Source: Bloomberg LLC as of June 9, 2010.

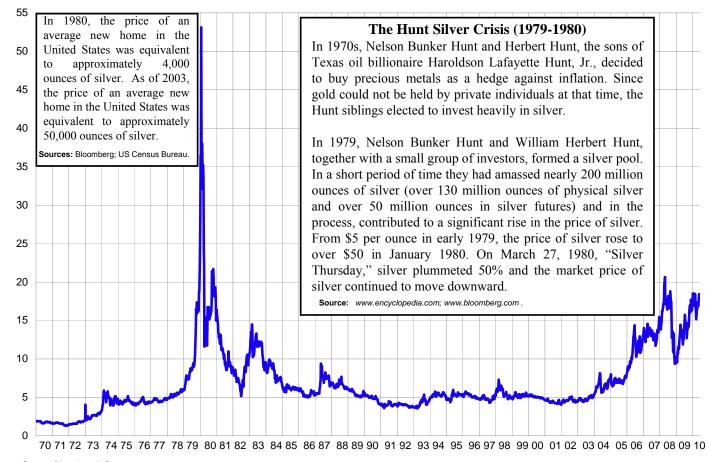
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## **OVERVIEW OF SILVER**

## The Price of Silver

1970 - 2010YTD

## Weekly Price of Silver (\$U.S. per Troy Ounce)



Source: Bloomberg LLC.

## **OVERVIEW OF SILVER**

## Annual World Production of Silver Since 1900

The word "silver" derives from the Anglo-Saxon term "sioful" used to describe the metal.

## Silver as an element:

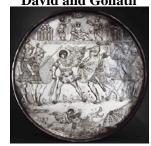
| Symbol:        | Ag              |
|----------------|-----------------|
| Atomic number: | 47              |
| Atomic Mass:   | 107.87          |
| Melting Point: | 962 degrees C°  |
| Boiling Point: | 2212 degrees C° |
| Color:         | Silver          |

soft, ductile

Source: Edumine Element Table.

Characteristics:

Silver plate from the Second Cypress Treasure, 625-630 "David and Goliath"



This is one example of the six silver *David Plates*, made in Constantinople during the Byzantine Empire. Each plate is crafted from a single piece of silver.

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## **Annual World Production of Silver From 1900 Through 2010YTD**

| Troy<br>Ounces<br>(million) | Metric<br>Tons<br>25,000 | Silver Mine P     | roduction in       | 2002 and 200      | 3               |             |  |   |    |     |                 |
|-----------------------------|--------------------------|-------------------|--------------------|-------------------|-----------------|-------------|--|---|----|-----|-----------------|
| 803.8                       | 25,000                   |                   |                    | 800               | 200             |             |  |   |    |     |                 |
|                             |                          | Country           |                    | Troy Ounces       |                 | Troy Ounces |  |   |    |     |                 |
|                             |                          |                   | Produced           | Produced          | Produced        | Produced    |  |   |    |     |                 |
|                             |                          | Mexico            | 3,240              | 104,169,240       | 2,500           | 80,377,500  |  |   |    |     |                 |
|                             | 00.000                   | Peru              | 3,690              | 118,637,190       | 3,900           | 125,388,900 |  |   |    |     |                 |
| 643.0                       | 20,000                   | China             | 2,800              | 90,022,800        | 3,000           | 96,453,000  |  |   |    |     | $\wedge \wedge$ |
|                             |                          | Australia         | 1,930              | 62,051,430        | 1,800           | 57,871,800  |  |   |    |     | / <b>v</b>      |
|                             |                          | USA               | 1,230              | 39,545,730        | 1,230           | 39,545,730  |  |   |    |     | /               |
|                             |                          | Chile             | 1,400              | 45,011,400        | 2,000           | 64,302,000  |  |   |    | h / |                 |
|                             | . =                      | Canada            | 730                | 23,470,230        | 700             | 22,505,700  |  |   | /  |     |                 |
| 482.3                       | 15,000                   | Poland            | 1,190              | 38,259,690        | 1,200           | 38,581,200  |  |   |    |     |                 |
|                             |                          | Other Countries   | 5,090              | 163,648,590       | 5,070           | 163,005,570 |  |   | _/ |     |                 |
|                             |                          | Total             | 21,300             | 684,816,300       | 21,400          | 688,031,400 |  |   |    |     |                 |
|                             |                          | Source: U.S. Geol | ogical Survey, Mii | neral Commodities | Summaries, Janu | ary 2010.   |  |   |    |     |                 |
|                             | 10.000                   |                   |                    |                   |                 |             |  |   | -  |     |                 |
| 321.5                       | 10,000                   |                   |                    |                   |                 |             |  | ~ |    |     |                 |
|                             |                          |                   |                    |                   | <b>~</b>        |             | _/                                     |   |    |     |                 |
|                             |                          |                   | _   /              |                   | /   \           |             | \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ |   |    |     |                 |
|                             |                          |                   | / ۱۱               | \  \ <i> </i>     | /   \           | ~~~         |  |   |    |     |                 |
|                             | 5,000                    | <b>~~/</b>        | W                  |                   | <b>\</b>        |             |  |   |    |     |                 |
| 160.7                       | 5,000                    |                   |                    |                   |                 | <b>/</b>    |  |   |    |     |                 |
|                             |                          |                   |                    |                   |                 | •           |  |   |    |     |                 |
|                             |                          |                   |                    |                   |                 |             |  |   |    |     |                 |
|                             |                          |                   |                    |                   |                 |             |  |   |    |     |                 |
|                             | 0                        |                   |                    |                   |                 |             |  |   |    |     |                 |
|                             | 0                        |                   |                    | -                 |                 |             |  | - | 1  |     |                 |

Source: U.S. Geological Survey.

#### Note

<sup>1.</sup> Conversion ratios: one metric ton equals 32,151 troy ounces; one troy ounce equals 1.0971 avoirdupois ounces.

#### **OVERVIEW OF SILVER**

# Global Supply and Demand Data for Silver

1999 - 2008

#### Bimetallism and The Silver Standard

In the United States, from 1792 to 1873, the US dollar was freely backed by both gold and silver under a system known as bimetallism. The US Coinage Act of 1792 pegged the exchange ratio between silver and gold at 15 to 1. Thus the dollar was defined to be 24.06 grams of silver or 1.60 grams of gold and could be exchanged for either silver or gold in this 15:1 ratio. Towards the end of the 19th century, bimetallism became a focus of political debate in the United States. One of the leading supporters for bimetallism and the free silver movement was William Jennings Bryan, who delivered his famous "cross of gold" speech at the National Democratic Convention on July 9, 1896. Bimetallism persisted in the United States until the adoption of the Gold Standard on March 14, 1900.

By 1900, a total of 59 countries were on the gold standard, with China, as the one main exception, remaining on the silver standard. China remained on the silver standard until November 1935, and it is often said that the silver standard helped protect China from the Great Depression that occurred in gold-standard countries during the 1929-1935 period.

Sources: www.econlibrary.org, Lai, Cheng-chung and Joshua Jr-shiang Gau, "Chinese Silver Standard Economy and the 1929 Great Depression," Economic History Review, July 2003.

The US Coinage Act of 1965 removed all of the silver from newly-minted quarters and dimes. Until 1968, US silver certificates paper currency were redeemable for an equivalent amount of silver. Since then, silver certificates have been replaced by Federal Reserve Notes declared as official legal tender.

## **Global Silver Supply and Demand Data**

| (in millions of ounces)   | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  | 2007  | 2008  | 1999-2008<br>10-Year<br>Average | 1999-2008<br>Average<br>% of Total |
|---------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------------------------------|------------------------------------|
| Supply                    |       |       |       |       |       |       |       |       |       |       |                                 |                                    |
| Mine Production           | 556.9 | 591.0 | 606.2 | 593.9 | 596.6 | 613.0 | 637.1 | 641.3 | 664.2 | 680.9 | 618.1                           | 66%                                |
| Net Government Sales      | 90.3  | 60.3  | 63.0  | 59.2  | 88.7  | 61.9  | 65.9  | 78.2  | 42.3  | 30.9  | 64.1                            | 7%                                 |
| Old Silver Scrap          | 181.6 | 180.7 | 182.7 | 187.5 | 184.0 | 183.7 | 186.0 | 188.0 | 181.9 | 176.6 | 183.3                           | 20%                                |
| Producer Hedging          |       |       | 18.9  |       |       | 9.6   | 27.6  |       |       | -     | 18.7                            | 2%                                 |
| Implied Net Disinvestment | 51.7  | 87.1  |       | 11.6  |       |       |       |       |       | -     | 50.1                            | 5%                                 |
| Total Supply              | 880.5 | 919.1 | 870.8 | 852.2 | 869.3 | 868.2 | 916.6 | 907.5 | 888.4 | 888.4 | 934.3                           | 100%                               |
| Demand                    |       |       |       |       |       |       |       |       |       |       |                                 |                                    |
| Fabrication               |       |       |       |       |       |       |       |       |       |       |                                 |                                    |
| Industrial Applications   | 339.0 | 374.2 | 335.2 | 339.1 | 349.7 | 367.1 | 405.1 | 424.5 | 453.5 | 447.2 | 383.5                           | 42%                                |
| Photography               | 227.9 | 218.3 | 213.1 | 204.3 | 192.9 | 178.8 | 160.3 | 142.4 | 124.8 | 104.8 | 176.8                           | 20%                                |
| Jewelry and Silverware    | 268.4 | 267.0 | 280.4 | 252.4 | 263.1 | 242.2 | 241.6 | 227.5 | 222.3 | 215.6 | 248.1                           | 27%                                |
| Coins and Medals          | 29.1  | 32.1  | 30.5  | 31.6  | 35.7  | 42.4  | 40.0  | 39.8  | 39.7  | 64.9  | 38.6                            | 4%                                 |
| Total Fabrication         | 864.4 | 891.6 | 859.2 | 827.4 | 841.4 | 830.5 | 847.0 | 834.2 | 840.3 | 832.5 | 846.9                           | 94%                                |
| Producer Hedging          | 16.0  | 27.4  |       | 24.8  | 20.9  |       |       | 6.8   | 23.5  | 5.6   | 17.9                            | 2%                                 |
| Implied Net Investment    |       |       | 11.7  |       | 7.0   | 37.7  | 69.6  | 66.6  | 24.7  | 50.2  | 38.2                            | 4%                                 |
| Total Demand              | 880.4 | 919.0 | 870.9 | 852.2 | 869.3 | 868.2 | 916.6 | 907.6 | 888.5 | 888.3 | 902.9                           | 100%                               |

Sources: U.S. Geological Survey; The Silver Institute.

1000-2008

1000-2008

- Investors may purchase physical silver in the form of bars or coins.
- The value of silver coins tends to be affected by two main factors: (i) the amount and purity of the silver content; and (ii) details concerning the specific minting.
- The value of silver bars tends to be determined primarily by weight.
- Silver coins and bars may be purchased from specialized dealers.
- Sources of information include:
  - www.austrian-mint.com
  - www.handyharman.com
  - www.perthmint.com
  - www.royalmint.com
  - www.silverinstitute.org
  - www.usmint.gov

## **Greens Creek Mine**



Greens Creek mine is one of the largest silver producing mines in the U.S. It is located on Admiralty Island near Juneau, Alaska.

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## **OVERVIEW OF SILVER**

Name

# Physical Silver

## **Selected Types of Silver Coins and Silver Bars**

Description

| rianio                                 | 2001/2011   |
|--|---|
| Coins                                  |   |
| American Eagle<br>Silver Dollar        | A one ounce silver coin minted in 0.999 pure silver displaying an American eagle on one side and Lady Liberty on the other, issued by the United States Mint.   |
| Australian Silver Coin<br>Series       | A one ounce silver coin minted in 0.999 pure silver issued by the Perth Mint of Australia. The 2004 edition displays a kookaburra, a well-known Australian bird.  |
| Britannia                              | Legal tender silver coins minted in 0.958 pure silver issued by the British Royal Mint in weights of 32 grams, 16 grams, 8 grams, and 3 grams.  |
| Brilliant Silver<br>Canadian Dollar    | A 25-gram, 0.999 pure silver coin issued by the Royal Canadian Mint. The 2004 edition commemorates the 400 <sup>th</sup> anniversary of the first French settlement in North America.   |
| Austria and Her<br>People Silver Coins | A 25-gram, silver coin series produced by the Austrian mint. The coins feature several Austrian regions, traditions, and castles in honor of the country and its history.   |
| South African Silver<br>Crown Series   | A series of one ounce silver coins minted by the South African Mint.  |
| Chinese Silver Panda                   | A series of silver bullion coins issued by the People's Republic of China. The design of the panda is changed every year, and the coins are minted in different sizes and denominations, ranging from 0.5 troy oz. to one kilogram. |
| Bars                                   |   |
| Silver Bars                            | Several weights of silver bars are available; the 1000-ounce and 100-ounce bars have tended to be the most popular among investors and fabricators.   |
| Silver Bars by                         | Silver bars available in various sizes from selected U.S. refineries such as ASARCO and   |

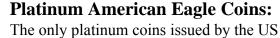


## Platinum and Gold in the **Music Industry**

In the United States, Gold, Platinum, Multi-Platinum, and Diamond awards are granted by the Recording Industry Association of America (RIAA) based on certified album sales. The RIAA Gold award program began in 1958 to recognize records that sold over 500,000 copies. In 1976, the RIAA added a Platinum title to records that sold over 1 million copies. The first Platinum album was The Eagles' Greatest Hits 1971-1975. In the mid-Eighties, the RIAA created a Multi-Platinum category for albums with 2 million or more units sold. In 1999, a Diamond program was launched to recognize albums that sell more than 10 million copies.

Source: Recording Industry Association of America.

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government. Platinum American Eagles were first minted in 1997, and the US government has continued minting annual editions through 2009.

In 2009, the United States Mint introduced a new six-year platinum coin program. This new series explores the core concepts of American democracy by highlighting the Preamble to the United States Constitution.



Section 5

# Overview of Platinum and Palladium







The word "platinum" derives from the Spanish word "platina," meaning "little silver."

#### Platinum as an element:

Symbol: Pt Atomic number: 78

Atomic Mass: 195.08

Melting Point: 1722 degrees C°
Boiling Point: 3827 degrees C°
Color: Silver-white

Characteristics: soft, malleable

Source: Edumine Element Table.

The origin of the word "palladium" comes from the asteroid Pallas (named after the Greek god of wisdom), which was discovered in the same year as palladium (1803).

#### Palladium as an element:

Symbol: Pd
Atomic number: 46
Atomic Mass: 106.42

Melting Point: 1554 degrees C°

Boiling Point: 2970 degrees C°

Color: Silver-white
Characteristics: soft, malleable

Source: Edumine Element Table.

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## **OVERVIEW OF PLATINUM AND PALLADIUM**

# History and Background of Platinum and Palladium

Unlike gold and silver, which have been known since the earliest civilizations, platinum and palladium have a more recent history. Platinum was categorized as a precious metal in 1751 and palladium was isolated as a separate metal in 1803.

## **Platinum**

- When Platinum was discovered by Spanish conquistadors in 16th century Ecuador, they thought it was silver that had not "ripened." They called it little silver, "Platina," and tossed it back into the rivers to age.
- In 1790, a French goldsmith created platinum jewelry for King Louis XVI and the King later declared platinum "a metal fit only for kings."
- In 1801, English physician William Hyde Wollaston obtained the first pure sample of platinum.
- In 1924 South Africa became a rich source of platinum when German geologist Hans Merensky discovered the largest platinum deposits ever found.
- As of the early 21st century, approximately 90% of all platinum supply originates from South Africa and Russia.

## **Palladium**

- Just two years after obtaining the first pure sample of platinum, William Hyde Wollaston discovered palladium in 1803. It was named after the asteroid "Pallas," which was discovered in the same year and which in turn took its name from the Greek "Pallas," goddess of wisdom.
- The use of palladium increased significantly during the 1970s for the development of automobile catalytic converters. Palladium is a primary component in catalytic converters, which are used to reduce vehicle exhaust emissions.
- Palladium is also used extensively in the electronics, dental, jewelry, and chemical sectors.

Sources: wikipedia.com; webelements.com; platinuminfo.net.

## **OVERVIEW OF PLATINUM AND PALLADIUM**

## The Price of Platinum

1960-2010YTD

## **Annual Changes in the Price of Platinum**

1960 - 2010YTD

| 1300 - 2010 | ,,,,,                      |         |                            |  |  |  |  |  |
|-------------|----------------------------|---------|----------------------------|--|--|--|--|--|
| Year        | % Change in<br>Price Y-o-Y | Year    | % Change in<br>Price Y-o-Y |  |  |  |  |  |
| 1960        | 4.4%                       | 1986    | 41.9%                      |  |  |  |  |  |
| 1961        | -0.2%                      | 1987    | 5.3%                       |  |  |  |  |  |
| 1962        | 0.2%                       | 1988    | 4.6%                       |  |  |  |  |  |
| 1963        | 0.0%                       | 1989    | -7.5%                      |  |  |  |  |  |
| 1964        | 6.0%                       | 1990    | -14.3%                     |  |  |  |  |  |
| 1965        | 11.3%                      | 1991    | -15.7%                     |  |  |  |  |  |
| 1966        | 1.5%                       | 1992    | 2.9%                       |  |  |  |  |  |
| 1967        | 15.0%                      | 1993    | 5.8%                       |  |  |  |  |  |
| 1968        | 136.5%                     | 1994    | 6.8%                       |  |  |  |  |  |
| 1969        | -34.2%                     | 1995    | 0.0%                       |  |  |  |  |  |
| 1970        | -32.4%                     | 1996    | -9.1%                      |  |  |  |  |  |
| 1971        | -9.9%                      | 1997    | 2.7%                       |  |  |  |  |  |
| 1972        | 30.3%                      | 1998    | -7.9%                      |  |  |  |  |  |
| 1973        | 11.6%                      | 1999    | 20.7%                      |  |  |  |  |  |
| 1974        | 7.9%                       | 2000    | 45.1%                      |  |  |  |  |  |
| 1975        | -16.4%                     | 2001    | -23.4%                     |  |  |  |  |  |
| 1976        | 9.1%                       | 2002    | 27.1%                      |  |  |  |  |  |
| 1977        | 13.5%                      | 2003    | 35.8%                      |  |  |  |  |  |
| 1978        | 91.5%                      | 2004    | 5.8%                       |  |  |  |  |  |
| 1979        | 82.0%                      | 2005    | 12.9%                      |  |  |  |  |  |
| 1980        | -6.2%                      | 2006    | 15.3%                      |  |  |  |  |  |
| 1981        | -31.6%                     | 2007    | 36.9%                      |  |  |  |  |  |
| 1982        | -9.6%                      | 2008    | -41.3%                     |  |  |  |  |  |
| 1983        | 9.5%                       | 2009    | 63.3%                      |  |  |  |  |  |
| 1984        | -22.7%                     | 2010YTD | 4.8%                       |  |  |  |  |  |
| 1985        | 10.2%                      |         |                            |  |  |  |  |  |

Sources: Bloomberg LLC. Data are as of June 9, 2010.

## Average Monthly Price<sup>(1)</sup> (U.S Dollars per Ounce)



Sources: Bloomberg LLC; Johnson Matthey PLC.

#### Note:

<sup>1.</sup> Pricing data are Johnson Matthey spot platinum price levels from 1960-1992 and Handy & Harman price levels from 1993-2010.

## **OVERVIEW OF PLATINUM AND PALLADIUM**

## The Price of Palladium

1970-2010YTD

## **Annual Changes in the Price of Palladium**

#### 1970 - 2010YTD

| 19/0 - 2010 | טוזט                       |         |                            |  |  |  |  |  |
|-------------|----------------------------|---------|----------------------------|--|--|--|--|--|
| Year        | % Change in<br>Price Y-o-Y | Year    | % Change in<br>Price Y-o-Y |  |  |  |  |  |
| 1970        | 0.0%                       | 1990    | -36.5%                     |  |  |  |  |  |
| 1971        | -1.4%                      | 1991    | -8.0%                      |  |  |  |  |  |
| 1972        | 94.2%                      | 1992    | 30.0%                      |  |  |  |  |  |
| 1973        | 21.6%                      | 1993    | 18.3%                      |  |  |  |  |  |
| 1974        | 46.0%                      | 1994    | 26.6%                      |  |  |  |  |  |
| 1975        | -64.7%                     | 1995    | -15.6%                     |  |  |  |  |  |
| 1976        | 21.4%                      | 1996    | -11.0%                     |  |  |  |  |  |
| 1977        | 0.0%                       | 1997    | 69.1%                      |  |  |  |  |  |
| 1978        | 37.3%                      | 1998    | 47.6%                      |  |  |  |  |  |
| 1979        | 138.6%                     | 1999    | 47.7%                      |  |  |  |  |  |
| 1980        | -9.6%                      | 2000    | 114.4%                     |  |  |  |  |  |
| 1981        | -53.6%                     | 2001    | -56.6%                     |  |  |  |  |  |
| 1982        | 28.6%                      | 2002    | -40.5%                     |  |  |  |  |  |
| 1983        | 82.2%                      | 2003    | -15.8%                     |  |  |  |  |  |
| 1984        | -18.3%                     | 2004    | -8.3%                      |  |  |  |  |  |
| 1985        | -29.1%                     | 2005    | 38.6%                      |  |  |  |  |  |
| 1986        | 22.1%                      | 2006    | 26.7%                      |  |  |  |  |  |
| 1987        | 3.4%                       | 2007    | 12.7%                      |  |  |  |  |  |
| 1988        | 9.2%                       | 2008    | -49.7%                     |  |  |  |  |  |
| 1989        | 4.6%                       | 2009    | 119.7%                     |  |  |  |  |  |
| 1990        | -36.5%                     | 2010YTD | 12.7%                      |  |  |  |  |  |

Sources: Bloomberg LLC. Data are as of June 9, 2010.

## Average Monthly Price<sup>(1)</sup> (US Dollars per Ounce)



Sources: Bloomberg LLC.

## World Production of Platinum and Palladium

# A History of Platinum Jewelry

At the end of the 19th century, and in the first half of the 20th, platinum became popular for making fine jewelry. At the outset of World War II, platinum was declared a strategic metal by the United States military and its use was prohibited for all non-military purposes. By the end of the 20th century, platinum had re-emerged as a popular jewelry component.

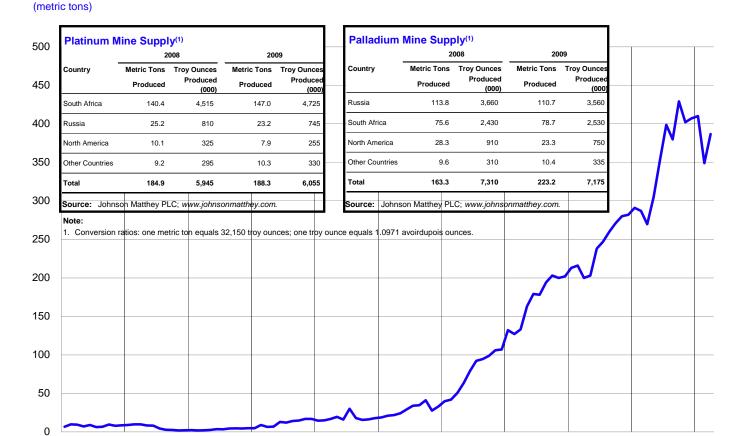
Source: Platinum Guild International.

"The thick settings of gold, silver and heavy woven strands that had been known since time immemorial were like the armour of jewelry. The use of platinum, which became its embroidery, an innovation introduced by us, produced the reformation...."

Louis Cartier, 1927

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## World Production<sup>(1)</sup> of Platinum and Palladium From 1900 to 2010YTD



Source: US Geological Survey.

1910

1920

1900

#### Note:

1950

1960

1970

1980

1990

1940

2000

1930

## **OVERVIEW OF PLATINUM AND PALLADIUM**

## Platinum Global Supply and Demand Data

2000-2009

## **Qualities of Platinum**

- Pure
  - Usually 95% pure (by comparison, 18 karat gold is 75% pure); platinum never fades or tarnishes but keeps its natural white color for a lifetime.
- Eternal
  - The density of platinum makes it more durable than other jewelry metals.
- Rare
  - Found in very few places around the world, platinum is 30 times more rare than gold.

**Sources:** www.preciousplatinum.com, Copyright © 2010 by Platinum Guild International.

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## **Global Supply of and Demand for Platinum**

| (in thousands of troy ounces) | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  | 2007  | 2008    | 2009  | 2000-2009<br>10-Year<br>Average | 2000-2009<br>Average<br>% of Total |
|-------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|---------|-------|---------------------------------|------------------------------------|
| Supply by Region              |       |       |       |       |       |       |       |       |         |       |                                 |                                    |
| South Africa                  | 3,800 | 4,100 | 4,450 | 4,630 | 5,010 | 5,115 | 5,295 | 5,070 | 4,515   | 4,725 | 4,671                           | 75%                                |
| Russia                        | 1100  | 1300  | 980   | 1050  | 845   | 890   | 920   | 915   | 810     | 745   | 956                             | 15%                                |
| North America                 | 285   | 360   | 390   | 295   | 385   | 365   | 345   | 325   | 325     | 255   | 333                             | 5%                                 |
| Rest of World                 | 105   | 100   | 150   | 225   | 250   | 270   | 270   | 290   | 295     | 330   | 229                             | 4%                                 |
| Total Supply                  | 5,290 | 5,860 | 5,970 | 6,200 | 6,490 | 6,640 | 6,830 | 6,600 | 5,945   | 6,055 | 6,188                           | 100%                               |
| Demand                        |       |       |       |       |       |       |       |       |         |       |                                 |                                    |
| Autocatalyst:                 |       |       |       |       |       |       |       |       |         |       |                                 |                                    |
| Gross                         | 189   | 2,520 | 2,590 | 3,270 | 3,490 | 3,795 | 3,905 | 4,145 | 3,700   | 2,480 | 3,008                           | 49%                                |
| Recovery                      | (470) | (530) | (565) | (645) | (690) | (770) | (860) | (935) | (1,120) | (800) | (739)                           | -12%                               |
| Jewelry                       | 2,830 | 2,590 | 2,820 | 2,510 | 2,160 | 1,965 | 1,640 | 1,455 | 1,365   | 2,450 | 2,179                           | 35%                                |
| Glass                         | 255   | 290   | 235   | 210   | 290   | 360   | 405   | 470   | 320     | 35    | 287                             | 5%                                 |
| Chemical                      | 295   | 290   | 325   | 320   | 325   | 325   | 395   | 420   | 400     | 355   | 345                             | 6%                                 |
| Electrical                    | 455   | 385   | 315   | 260   | 300   | 360   | 360   | 255   | 225     | 175   | 309                             | 5%                                 |
| Petroleum                     | 110   | 130   | 130   | 120   | 150   | 170   | 180   | 205   | 240     | 205   | 164                             | 3%                                 |
| Investment                    | (60)  | 90    | 80    | 15    | 45    | 15    | (40)  | 170   | 555     | 630   | 150                             | 2%                                 |
| Other                         | 375   | 465   | 540   | 470   | 470   | 475   | 490   | 495   | 500     | 385   | 467                             | 8%                                 |
| Total Demand                  | 3,979 | 6,230 | 6,470 | 6,530 | 6,540 | 6,695 | 6,475 | 6,680 | 6,185   | 5,915 | 6,170                           | 100%                               |

Source: Platinum 2009, published by Johnson Matthey PLC, November 2009.

#### **OVERVIEW OF PLATINUM AND PALLADIUM**

## Palladium Global Supply and Demand Data

2000-2009

## As of mid-2010, five palladium **Exchange-Traded Funds** (ETFs) had total holdings amounting to approximately one-third of annual global consumption. While the popularity of Palladium Exchange-Traded Funds has increased the convenience of investing in the white metal, when profit-taking, asset reallocation, or other ETF liquidations occur, ETFs' holdings of palladium may add to the supply of the metal and exert downward pressure on prices.



 Autocatalysts are by far the largest user of palladium; autocatalysts convert over 90 percent of hydrocarbons, carbon monoxide, and oxides of nitrogen produced in the exhaust from gasoline engines into carbon dioxide, nitrogen, and water vapor.

Source www.stillwaterpalldium.com.

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## **Global Supply of and Demand for Palladium**

| (in thousands of troy ounces) | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  | 2007    | 2008    | 2009  | 2000-2009<br>10-Year<br>Average | 2000-2009<br>Average<br>% of Total |
|-------------------------------|-------|-------|-------|-------|-------|-------|-------|---------|---------|-------|---------------------------------|------------------------------------|
| Supply by Region              |       |       |       |       |       |       |       |         |         |       |                                 |                                    |
| South Africa                  | 1,860 | 2,010 | 2,160 | 2,320 | 2,480 | 2,605 | 2,775 | 2,765   | 2,430   | 2,530 | 2,394                           | 32%                                |
| Russia                        | 5,200 | 4,340 | 1,930 | 2,950 | 4,800 | 4,620 | 3,920 | 4,540   | 3,660   | 3,560 | 3,952                           | 53%                                |
| North America                 | 635   | 850   | 990   | 935   | 1,035 | 910   | 985   | 990     | 910     | 750   | 899                             | 12%                                |
| Rest of World                 | 105   | 120   | 170   | 245   | 265   | 270   | 270   | 285     | 310     | 335   | 238                             | 3%                                 |
| Total Supply                  | 7,800 | 7,320 | 5,250 | 6,450 | 8,580 | 8,405 | 7,950 | 8,580   | 7,310   | 7,175 | 7,482                           | 100%                               |
| Demand                        |       |       |       |       |       |       |       |         |         |       |                                 |                                    |
| Autocatalyst:                 |       |       |       |       |       |       |       |         |         |       |                                 |                                    |
| Gross                         | 5,640 | 5,090 | 3,050 | 3,450 | 3,790 | 3,865 | 4,015 | 4,545   | 4,460   | 3,895 | 4,180                           | 63%                                |
| Recovery                      | (230) | (280) | (370) | (410) | (530) | (625) | (805) | (1,015) | (1,115) | (950) | (633)                           | -9%                                |
| Jewelry                       | 255   | 240   | 270   | 260   | 930   | 1,430 | 995   | 715     | 855     | 920   | 687                             | 10%                                |
| Chemical                      | 255   | 250   | 255   | 265   | 310   | 415   | 440   | 375     | 355     | 345   | 327                             | 5%                                 |
| Electronics                   | 2,160 | 670   | 760   | 900   | 920   | 970   | 1,205 | 1,240   | 1,100   | 1,000 | 1,093                           | 16%                                |
| Dental                        | 820   | 725   | 785   | 825   | 850   | 815   | 620   | 630     | 625     | 605   | 730                             | 11%                                |
| Investment                    | -     | -     | -     | 30    | 200   | 220   | 50    | 260     | 420     | 635   | 182                             | 3%                                 |
| Other                         | 60    | 65    | 90    | 110   | 90    | 265   | 85    | 85      | 75      | 70    | 100                             | 1%                                 |
| Total Demand                  | 8,960 | 6,760 | 4,840 | 5,430 | 6,560 | 7,355 | 6,605 | 6,835   | 6,775   | 6,520 | 6,664                           | 100%                               |

Source: Platinum 2009, published by Johnson Matthey PLC, November 2009.

## **OVERVIEW OF PLATINUM AND PALLADIUM**

# Physical Platinum and Palladium

## **Select Types of Platinum Coins and Platinum Bars**

- Investors may purchase physical platinum and palladium in the form of bars or coins.
- The value of platinum and palladium coins tends to be affected by two main factors: (i) the amount and purity of the platinum and palladium content; and (ii) details concerning the specific minting.
- The value of platinum and palladium bars tends to be determined primarily by weight.
- Platinum and palladium coins and bars may be purchased from specialized dealers.
- Sources of information include:
  - www.austrian-mint.com
  - www.handyharman.com
  - www.perthmint.com
  - www.preciousplatinum.com
  - www.royalmint.com
  - www.usmint.gov

|  | Name                       | Description  |  |  |  |  |  |  |  |
|--|----------------------------|--|--|--|--|--|--|--|--|
| A. T. W. L. W.   | Platinum Coins             |  |  |  |  |  |  |  |  |
| )  | Platinum American<br>Eagle | Platinum American Eagle coins are U.S legal tender. They are offered in sizes of one, one-half, one-quarter, and one-tenth ounces with face values of \$100, \$50, \$25, and \$10 respectively.                          |  |  |  |  |  |  |  |
| )  | Australian Koala           | Australian Koala coins are issued by the Perth Mint and are available in weights of two, one, one-half, one-quarter, one-tenth, and one-twentieth ounces. The prices reflect the value of their 0.9995 platinum content. |  |  |  |  |  |  |  |
| The state of the s | Isle of Man Noble          | With its first minting in 1983, the Isle of Man Noble became the first world's first platinum investment coin. Nobles come in weights of one, one-half, one-quarter, one-tenth, and one-twentieth ounces.                |  |  |  |  |  |  |  |
|  | Canadian Maple Leaf        | Issued by the Canadian Mint, Canadian Platinum Maple Leafs are available in five sizes: one, one-half, one-quarter- one-tenth, and one-twentieth ounces. The one-ounce coin is the most popular.                         |  |  |  |  |  |  |  |
|  | Chinese Panda              | Chinese Panda coins are made from 0.9995 platinum and are available in sizes of one, one-half, one-quarter, one-tenth, and one-twentieth ounces.   |  |  |  |  |  |  |  |
|  | Platinum Bars              |  |  |  |  |  |  |  |  |
|  | Platinum Bars              | Investment-grade bars are most common in the 10-ounce size; smaller sizes are also available from various refiners.  |  |  |  |  |  |  |  |
|  | Palladium Coins            |  |  |  |  |  |  |  |  |
| The state of the s | Australian Emu             | In 1994, the Perth Mint began producing one ounce palladium coins as part of the Emu series. In 1998, the mint suspended production due to a world-wide shortage of palladium.   |  |  |  |  |  |  |  |
|  | Russian Ballerina          | In 1990, the former Soviet Union produced a single issue of 15,000 palladium coins, featuring a ballerina. The coins were not circulated and are very rare.  |  |  |  |  |  |  |  |
|  | Palladium Bars             |  |  |  |  |  |  |  |  |
|  | Palladium Bars             | The most common palladium investment bar is the 0.9995 palladium Produits Artistiques de Métaux Précieux (PAMP) Suisse one ounce bar.  |  |  |  |  |  |  |  |



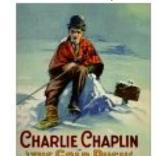
Sources: Platinum Guild: certifiedmint.com.

## Gold, Silver, and Platinum in the Movies

"The Treasure of the Sierra



Madre," 1948



"The Gold Rush," 1925

In this classic silent film, Charlie Chaplin heads to the Yukon Territory to seek his fortune in the Alaska gold rush. The film, written and directed by Charlie Chaplin, was shot in California and Nevada from spring 1924 through summer 1925. The movie is ranked seventyfourth on the American Film Institute's list of Top 100 Films of the 20th century.

Directed by John Huston, this is a tale of the search for gold in the Sierra Madre Mountains. The film stars Humphrey Bogart who plays a poor, out of work drifter who goes on a search for gold with two other men. As much as it is a story about the search of gold, it is a story about the effects of anticipation of wealth on the human conscience. The movie is ranked thirtieth on the American Film Institute's list of Top 100 Films of the 20<sup>th</sup> century.

## Section 6

# **Overview of Precious Metals Companies**

"Platinum Blonde," 1931



Produced in 1931 by Frank Capra, this movie may be considered as a benchmark of style and content for Depression era films. The film reflects the perceptions of the era, portraying the relationship between a snobby, wealthy daughter and a hard working newspaper reporter.

"The Silver Chalice," 1954



This epic film, directed by Victor Saville, introduced Paul Newman to the big screen and tells the story of a Greek boy, Basil, who is stripped of his family's fortune and sold into slavery. Basil grows up to become a sculptor and is commissioned to sculpt a special silver chalice from which Jesus Christ drinks at the Last Supper. 62

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Sources: American Film Institute; www.filmsite.org.

## **OVERVIEW OF PRECIOUS METALS COMPANIES**

Select Factors Leading to Price Divergence Between Gold and Gold Shares

## **Cross of Gold Speech**

The Cross of Gold speech was delivered by William Jennings Bryan at the 1896 Democratic National Convention in Chicago on July 9, 1896. The speech advocated bimetallism (a monetary standard in which the value of the monetary unit is defined as equivalent either to a certain quantity of gold or to a certain quantity of silver).

## **Excerpts from the Speech:**

- "Now, my friends, let me come to the great paramount issue. If they ask us here why it is we say more on the money question than we say upon the tariff question, I reply that if protection has slain its thousands the gold standard has slain its tens of thousands. If they ask us why we did not embody all these things in our platform which we believe, we reply to them that when we have restored the money of the Constitution, all other necessary reforms will be possible, and that until that is done there is no reform that can be accomplished."
- "You come to us and tell us that the great cities are in favor of the gold standard. I tell you that the great cities rest upon these broad and fertile prairies. Burn down your cities and leave our farms, and your cities will spring up again as if by magic. But destroy our farms and the grass will grow in the streets of every city in the country."

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- Quality and Execution Ability of Management
- Acquisitions and Divestitures
- Capital Structure
- Issuance/Retirement of Equity and Debt
- Returns on Capital
- Governmental Policies
- Taxation
- Input Costs (e.g., Labor and Energy)
- Forward Sales and Hedging Activity
- Contractual Relationships
- General Equity Market Conditions



- Bimetallism and "Free Silver" were demanded by William Jennings Bryan who took over leadership of the Democratic Party in 1896.
- The Republican Party nominated William McKinley on a platform supporting the gold standard.
- The McKinley campaign was effective at persuading voters that poor economic progress and unemployment would be exacerbated by adoption of the Bryan platform. The year 1896 saw the election of McKinley, who implemented the gold standard and ran on it in his 1900 reelection. The gold standard lasted until the Great Depression. It was abandoned in 1934 in FDR's New Deal program.

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## **OVERVIEW OF PRECIOUS METALS COMPANIES**

## NYSE Arca Gold BUGS Index

As of June 2, 2010

## **Description**

The NYSE Arca Gold BUGS Index is a modified weighted index of companies involved in gold mining. The index is designed to give investors significant exposure to near-term movements in gold prices by including companies that do not hedge their gold production beyond 1.5 years. The index was developed with a base value of 200 as of March 15, 1996.

Source Bloomberg.

#### **Index Performance**

Since 2000



Source Bloomberg LLC.

## **AMEX Gold BUGS Index Constituents**

|                           |        | 2009 Total |            |
|---------------------------|--------|------------|------------|
| Company Name              | Symbol | Return (%) | Weight (%) |
| Agnico-Eagle Mines        | AEM    | 5.59       | 4.35       |
| AngloGold Ashanti         | AU     | 45.57      | 4.48       |
| Barrick Gold              | ABX    | 8.18       | 15.01      |
| Cia de Minas Buenaventura | BVN    | 68.77      | 4.82       |
| Coeur d'Alene Mines       | CDE    | 105.23     | 4.15       |
| Eldorado Gold             | EGO    | 78.24      | 5.56       |
| Gold Fields               | GFI    | 33.51      | 4.54       |
| Goldcorp                  | GG     | 25.43      | 15.19      |
| Harmony Gold Mining       | HMY    | -6.77      | 4.25       |
| Hecla Mining              | HL     | 120.71     | 4.16       |
| IAMGOLD                   | IAG    | 156.99     | 5.07       |
| Kinross Gold              | KGC    | 0.34       | 4.10       |
| Lihir Gold                | LIHR   | 33.71      | 5.00       |
| Newmont Mining            | NEM    | 17.27      | 9.89       |
| Randgold Resources        | GOLD   | 80.68      | 4.98       |
| Yamana Gold               | AUY    | 48.01      | 4.39       |
|                           |        |            |            |

**Source** Bloomberg LLC.

## **Coinage Act of 1873**

- The Fourth Coinage Act was enacted by the United States Congress in 1873 and embraced the gold standard and de-monetized silver.
   Western mining interests and others who wanted silver in circulation years later labeled this measure the "Crime of '73." Gold became the only metallic standard in the United States, hence putting the United States de facto onto the gold standard.
- The USA did not actually adopt the gold standard de jure until the year 1900, following a lengthy period of debate made famous by William Jennings Bryan's Cross of Gold speech at the 1896 Democratic convention.

## MorganStanley SmithBarney

## **OVERVIEW OF PRECIOUS METALS COMPANIES**

# Philadelphia Stock Exchange Index

As of June 2, 2010

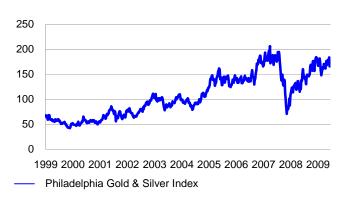
## **Description**

The Philadelphia Stock Exchange Gold and Silver Index is a capitalization-weighted index, which includes the leading companies involved in the mining of gold and silver. The index was developed with a base value of 100 as of January 1979.

Source Bloomberg LLC.

#### **Index Performance**

Since 2000



Source Bloomberg LLC.

## **Philadelphia Gold & Silver Constituents**

2009 Total

|                           |        | 2009 I otai |            |
|---------------------------|--------|-------------|------------|
| Company Name              | Symbol | Return (%)  | Weight (%) |
| Agnico-Eagle Mines Ltd.   | AEM    | 5.6         | 4.3        |
| AngloGold Ashanti Ltd.    | AU     | 45.6        | 6.8        |
| Barrick Gold Corp.        | ABX    | 8.2         | 19.5       |
| Cia de Minas Buenaventura | BVN    | 68.8        | 4.2        |
| Freeport-McMoRan          | FCX    | 228.5       | 13.6       |
| Gold Fields Ltd. (ADS)    | GFI    | 33.5        | 4.3        |
| Goldcorp Inc.             | GG     | 25.4        | 14.5       |
| Harmony Gold Mining Co.   | HMY    | -6.8        | 1.9        |
| Kinross Gold Corp.        | KGC    | 0.3         | 5.6        |
| Newmont Mining Corp.      | NEM    | 17.3        | 12.2       |
| Pan American Silver Corp. | PAAS   | 39.5        | 1.2        |
| Randgold Resources Ltd.   | GOLD   | 80.7        | 3.6        |
| Royal Gold Inc.           | RGLD   | -3.6        | 1.1        |
| Silver Standard Resources | SSRI   | 37.2        | 0.6        |
| Silver Wheaton Corp.      | SLW    | 131.4       | 3.0        |
| Yamana Gold Inc.          | AUY    | 48.0        | 3.6        |
|                           |        |             |            |

**Source** Bloomberg LLC.

• At times, some degree of

investor attention has been

miners. These are small gold

mining firms that often own

conducted geology studies.

Junior miners that have not

reached production stage do

not really represent direct exposure to gold. They are

more like a deep-out-of-the money call option that a

to overcome numerous

bearing ore. Among the junior miners, it may be more appropriate for investors to

year of production. Such firms usually have gold in the ground, and in most cases have passed regulatory and

regulatory and operational hurdles to produce gold-

focus on companies within a

specific company will be able

some land and have

focused on the junior gold

## Market Vectors Junior Gold Miners Index

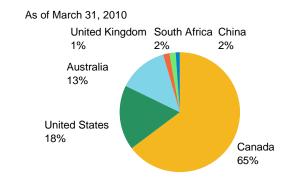
As of June 2, 2010

## **Description**

The Index provides exposure to a global universe of publicly traded small- and medium-capitalization companies that generate at least 50% of their revenues from gold and/or silver mining, hold real property that has the potential to produce at least 50% of the company's revenue from gold or silver mining when developed, or primarily invest in gold or silver. As of June 2, 2010, it was at 2,048 and at 1,000 on December 2003.

Source vaneck.com.

## **Index Country Breakdown**



Source vaneck.com

#### Market Vectors Junior Gold Miners Index Constituents

2009 Total

|                           |        | 2009 I Otal |            |
|---------------------------|--------|-------------|------------|
| Company Name              | Symbol | Return (%)  | Weight (%) |
| New Gold                  | NGD    | 154.55      | 4.58       |
| Alamos Gold               | AGI    | 43.54       | 4.34       |
| Semafo                    | SMF    | 269.17      | 4.03       |
| Hecla Mining              | HL     | 120.71      | 3.82       |
| Silver Standard Resources | SSRI   | 37.20       | 3.69       |
| Coeur d'Alene Mines       | CDE    | 105.23      | 3.53       |
| Silvercorp Metals         | SVM    | 172.08      | 3.11       |
| Allied Nevada Gold        | ANV    | 198.02      | 3.01       |
| Golden Star Resources     | GSS    | 212.00      | 2.85       |
| NovaGold Resources        | NG     | 317.01      | 2.78       |
| Gammon Gold               | GRS    | 101.28      | 2.75       |
| Detour Gold               | DGC    | 110.85      | 2.66       |
| European Goldfields       | EGU    | 87.65       | 2.55       |
| Northgate Minerals        | NXG    | 271.08      | 2.52       |
| Gabriel Resources         | GBU    | 187.50      | 2.37       |
| San Gold                  | SGR    | 204.17      | 2.32       |
| Ventana Gold              | VEN    | 2138.89     | 2.27       |
| Jaguar Mining             | JAG    | 113.96      | 2.09       |
| Andean Resources          | AND    | 152.63      | 2.06       |
|                           |        |             |            |

Source Bloomberg LLC, vaneck.com.

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financial hurdles.

# FTSE Gold Mines Index FTSE Gold Mines EMEA Index FTSE Gold Mines Americas Index FTSE Gold Mines Americas Index

Source www.ftse.com.

## **OVERVIEW OF PRECIOUS METALS COMPANIES**

## FTSE Gold Mines Index

As of June 7, 2010

## **Description**

The FTSE Gold Mines index series encompasses all gold mining companies that have a sustainable and attributable gold production of at least 300,000 ounces a year, and that derive 51% or more of their revenue from mined gold. It was launched in 1992 with a base value of 1000.

Source www.ftse.com.

#### **Index Performance**

Since 2000



## **FTSE Gold Mines Index Constituents**

|                           |        | 2009 I otai |           |
|---------------------------|--------|-------------|-----------|
| Company Name              | Symbol | Return (%)  | Weight (% |
| Barrick Gold Corp.        | ABX    | 8.18        | 18.01     |
| Goldcorp Inc.             | GG     | 25.43       | 13.30     |
| Newmont Mining Corp.      | NEM    | 17.27       | 11.63     |
| Newcrest Mining Ltd.      | NCM    | 4.72        | 6.92      |
| AngloGold Ashanti Ltd.    | AU     | 45.57       | 6.54      |
| Kinross Gold Corp.        | KGC    | 0.34        | 5.63      |
| Gold Fields Ltd.          | GFI    | 33.51       | 4.22      |
| Agnico-Eagle Mines Ltd.   | AEM    | 5.59        | 4.18      |
| Yamana Gold Inc.          | AUY    | 48.01       | 3.46      |
| Randgold Resources Ltd.   | GOLD   | 80.68       | 3.27      |
| Lihir Gold Ltd.           | LGL    | 9.49        | 3.14      |
| Eldorado Gold Corp.       | EGO    | 78.24       | 3.12      |
| Cia de Minas Buenaventura | BVN    | 68.77       | 3.05      |
| IAMGOLD Corp.             | IAG    | 156.99      | 2.34      |
| Red Back Mining Inc.      | RBI    | 74.62       | 2.26      |
|                           |        |             |           |

2009 Total

Source Bloomberg LLC.

## S&P/TSX Global Gold Index

As of June 7, 2010

## **Ten Golden Things**

- Golden age
- Golden calf
- Golden fleece
- Golden goose
- Golden handshake
- Golden mean
- Golden oldie
- Golden parachute
- Golden rule
- Golden wedding anniversary

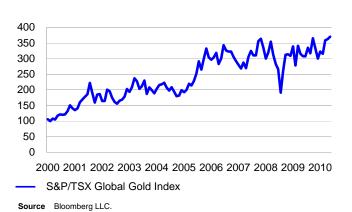
## **Description**

The S&P/TSX Global Gold Index offers investors a real-time, investable global gold index. As a broadly representative and investable index, the S&P/TSX Global Gold Index can be used as a benchmark of global gold portfolios and as a basis for index-linked investment vehicles.

Source www.ftse.com.

#### **Index Performance**

Since 2000



## **S&P/TSX Global Gold Index Constituents**

2000 Total

| Return (%)    |   |
|---------------|---|
| 11014111 (70) | Weight (%)  |
| 8.18          | 18.01   |
| 25.43         | 13.30   |
| 17.27         | 11.63   |
| 4.72          | 6.92  |
| 45.57         | 6.54  |
| 5.59          | 5.63  |
| 33.51         | 4.22  |
| 48.01         | 4.18  |
| 68.72         | 3.46  |
| -6.77         | 3.27  |
|               | 8.18<br>25.43<br>17.27<br>4.72<br>45.57<br>5.59<br>33.51<br>48.01 |

Source Bloomberg LLC.

## **OVERVIEW OF PRECIOUS METALS COMPANIES**

# **Examples of Precious Metal Companies**

List includes examples of companies with Market Capitalization greater than \$1Bn (as of May 31, 2010)

- Investors may invest in a variety of US, Canadian, South African, Australian, and Asian gold-related companies.
- Further information on additional precious metalsrelated companies can be found in the Goldsheets Mining Directory at www.goldsheetlinks.com.

## **Gold Exchange Traded Funds** (ETFs)

The idea of a gold ETF was first officially conceptualized by Benchmark Asset Management Company Private Ltd in India when they filed a proposal with the SEBI in May 2002. However it did not receive regulatory approval at first and was only launched later, in March 2007.

The world's first listing of an **Exchange Traded Commodity backed** by physical bullion was issued on the ASX (Australian Securities Exchange) in 2003.

Source: SMC Global Securities Ltd., www.asx.com.au.

#### **Performance Data** Expressed in US Dollars

| Expressed in US Dollars   |                 | 5/31/2010       | 5/31/2010<br>Market |               | 7      | Γotal Returi | n      |        | Annual<br>Dividend |
|---|-----------------|-----------------|---------------------|---------------|--------|--------------|--------|--------|--------------------|
|   |                 | Price           | Cap.                | 1Q2010        | 2009   | 2008         | 2007   | 2006   | Yield              |
| Name  | Symbol          | (US \$)         | (US \$MM)           | (%)           | (%)    | (%)          | (%)    | (%)    | (%)                |
| <b>Examples of Gold Producing Companies v</b>   | with market cap | italization gre | ater than \$1       | billion       | · , ,  | . ,          | · · ·  | . ,    |                    |
| North America   |                 |                 |                     |               |        |              |        |        |                    |
| Newmont Mining Corp   | NEM             | 53.82           | 26,020              | 7.9%          | 17.3%  | -15.8%       | 9.1%   | -14.8% | 0.8%               |
| Barrick Gold Corp   | ABX             | 42.08           | 41,449              | -2.6%         | 8.2%   | -11.5%       | 38.2%  | 10.9%  | 1.0%               |
| Freeport McMoran Copper & Gold  | FCX             | 70.05           | 30,307              | 4.2%          | 228.5% | -75.5%       | 86.8%  | 13.1%  | 0.7%               |
| Goldcorp Inc  | GG              | 43.08           | 31,615              | -8.1%         | 8.3%   | 14.2%        | 2.8%   | 28.7%  | 0.5%               |
| lamgold Corp  | IAG             | 17.30           | 6,417               | -18.2%        | 118.1% | -5.0%        | -21.0% | 13.5%  | 0.4%               |
| South Africa  |                 |                 |                     |               |        |              |        |        |                    |
| Anglogold Ashanti   | 656565          | 42.13           | 15,226              | -9.0%         | 22.0%  | -7.7%        | -10.2% | 6.0%   | 0.4%               |
| Anglo American Platinum   | 676100          | 101.25          | 26,645              | -3.9%         | 53.1%  | -45.7%       | 26.7%  | 93.5%  | 0.0%               |
| Gold Fields   | 628021          | 13.76           | 9,711               | -5.4%         | 7.8%   | -4.9%        | -24.2% | 20.0%  | 1.4%               |
| Impala Platinum   | 645780          | 25.37           | 16,028              | 6.1%          | 53.4%  | -38.9%       | 35.0%  | 71.1%  | 1.5%               |
| Harmony Gold Mining   | 641056          | 9.78            | 4,189               | -9.2%         | -22.0% | 38.7%        | -36.6% | 31.0%  | 0.7%               |
| Australia   |                 |                 | -                   |               |        |              |        |        |                    |
| Newcrest Mining   | 663710          | 27.16           | 13,132              | -7.0%         | 4.7%   | 2.8%         | 36.4%  | 8.7%   | 0.6%               |
| Lihir Gold Ltd  | 651859          | 3.35            | 7,931               | -7.0%         | 9.5%   | -16.6%       | 25.6%  | 43.1%  | 0.8%               |
| Asia  |                 |                 | -                   |               |        |              |        |        |                    |
| Zhongjin Gold Co  | 667682          | 8.88            | 7,022               | -16.2%        | 245.0% | -67.1%       | 508.0% | 221.5% | 0.3%               |
| Fujian Zijin Mining   | 672529          | 0.74            | 2,968               | -17.5%        | 61.0%  | -60.5%       | 183.0% | 220.4% | 1.8%               |
| <b>Examples of Silver Producing Companies</b>   | with market ca  | pitalization gr | eater than \$       | 1 billion     |        |              |        |        |                    |
| BHP Billiton Ltd.   | BHP             | 64.84           | 108,804             | 6.0%          | 84.9%  | -37.5%       | 79.3%  | 21.1%  | 2.1%               |
| Compania de Minas Buenventura   | BVN             | 36.00           | 9,896               | -7.5%         | 68.8%  | -28.9%       | 104.5% | 0.8%   | 1.4%               |
| Grupo Mexico  | 264367          | 2.38            | 19,562              | 10.8%         | 255.3% | -58.3%       | 84.4%  | 71.0%  | 0.0%               |
| KGHM Polska Miedz   | 526325          | 29.55           | 5,911               | 1.2%          | 339.1% | -70.7%       | 37.9%  | 56.4%  | 2.6%               |
| Coeur d'Alene Mining Corp.  | CDE             | 15.10           | 1,329               | -17.1%        | 105.2% | -82.2%       | -0.2%  | 23.8%  | 0.0%               |
| Pan American Silver Corp  | PAAS            | 24.98           | 2,671               | -2.7%         | 39.5%  | -51.1%       | 38.8%  | 33.7%  | 0.2%               |
| Silver Standard Resources Inc   | SSRI            | 18.00           | 1,417               | -18.7%        | 37.2%  | -56.4%       | 18.8%  | 100.4% | 0.0%               |
| <b>Examples of Platinum Producing Compan</b>  | ies with market | capitalization  | greater tha         | n \$1 billion |        |              |        |        |                    |
| Anglo American Platinum   | 676100          | 101.25          | 26,645              | -3.9%         | 53.1%  | -45.7%       | 26.7%  | 93.5%  | 0.0%               |
| Impala Platinum Holdings  | 645780          | 25.37           | 16,028              | 6.1%          | 53.4%  | -38.9%       | 35.0%  | 71.1%  | 1.5%               |
| Lonmin PLC  | LNMIY           | 24.35           | 4,923               | -2.3%         | 149.8% | -78.3%       | 6.4%   | 117.3% | 1.8%               |
| Aquarius Platinum Ltd.  | 617536          | 5.59            | 2,591               | -5.8%         | 105.6% | -70.5%       | 41.0%  | 158.4% | 0.3%               |
| Examples of Palladium Producing Companies with market capitalization greater than \$1 billion |                 |                 |                     |               |        |              |        |        |                    |
| Norilsk Nickel Mining Company   | 713143          | 158.00          | 30,119              | 35.0%         | 114.1% | -75.5%       | 75.3%  | 82.7%  | 0.0%               |
| Stillwater Mining Co  | SWC             | 13.24           | 1,294               | 36.9%         | 91.9%  | -48.9%       | -22.7% | 8.0%   | 0.0%               |

Sources: FactSet; Bloomberg LLC.

- The COMEX Division gold futures began trading in 1974, with the repeal of the ban of private ownership of gold in the United States.
- The NYMEX platinum contract began trading in 1956 and is the oldest continuously traded precious metals futures contract in the world.
- Futures and options on futures are regulated by the US Commodity Futures Trading Commission.

# Gold and Silver Futures on the Chicago Board of Trade (CBOT)

Gold and silver futures are also traded on the Chicago Board of Trade (CBOT). Contract unit sizes for gold are available in smaller sizes — 33.2 troy ounces on the CBOT versus 100 troy ounces on the COMEX; and contract unit sizes for silver on the CBOT are 1,000 troy ounces for silver versus 5,000 troy ounces on the COMEX. In May 2004, the CBOT announced plans to offer electronically traded standard-size gold and silver contracts.

Sources: Chicago Board of Trade; "Gold Move is CBOT's Third Metal Attempt," *Financial Times*, Grant, Jeremy, May 21, 2004.

#### **COMEX Gold Futures**

| Trading symbol                   | GC   |
|----------------------------------|--|
| Trading unit                     | 100 troy ounces  |
| Price quotations                 | US dollars per troy ounce  |
| Grade and quality specifications | For each contract, the seller must deliver 100 troy ounces of gold of not less than 0.995 fineness |
| Margin requirements              | Margins are required for all open futures positions  |

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#### **OVERVIEW OF PRECIOUS METALS COMPANIES**

# Precious Metals Futures and Options Contracts

Listed Futures and Options Contracts

## **Futures Contracts**

Precious metals futures contracts are standardized commitments to make or accept delivery of a specified type and quantity of a precious metal at the end of a specified future month. The price of the futures contract is agreed upon at the time the commitment is made.

## **Options Contracts**

A *call option* gives the buyer the right, but not the obligation, to buy the underlying asset at a fixed price before a specified date in the future. A *put option* gives the buyer the right, but not the obligation, to sell the underlying asset at a fixed price before a specified date in the future.

The New York Mercantile Exchange (www.nymex.com) is the world's largest physical commodity futures exchange. Precious metals trading on the NYMEX is conducted through two divisions: (i) the COMEX Division, which lists futures and options contracts on gold and silver; and (ii) the NYMEX Division, which lists futures and options contracts for platinum and options contracts for palladium.

Some of the more common precious metals futures are listed below:

#### **COMEX Silver Futures**

| Trading symbol                   | SI   |
|----------------------------------|--|
| Trading unit                     | 5,000 troy ounces  |
| Price quotations                 | US dollars per troy ounce  |
| Grade and quality specifications | For each contract, the seller must<br>deliver 5,000 troy ounces of silver<br>of not less than 0.999 fineness |
| Margin requirements              | Margins are required for all open futures positions  |

#### **NYMEX Platinum Futures**

| Trading symbol                   | PL   |
|----------------------------------|--|
| Trading unit                     | 50 troy ounces   |
| Price quotations                 | US dollars per troy ounce  |
| Grade and quality specifications | For each contract, the seller must<br>deliver 50 troy ounces of platinum<br>of not less than 0.9995 fineness |
| Margin requirements              | Margins are required for all open futures positions  |

#### **NYMEX Palladium Futures**

| Trading symbol                   | PA  |
|----------------------------------|---|
| Trading unit                     | 100 troy ounces   |
| Price quotations                 | US dollars per troy ounce   |
| Grade and quality specifications | For each contract, the seller must<br>deliver 100 troy ounces of<br>palladium of not less than 0.9995<br>fineness |
| Margin requirements              | Margins are required for all open futures positions   |

Source: New York Mercantile Exchange.



John Maynard Keynes (June 5, 1883 – April 21, 1946)

British economist whose ideas have profoundly affected the theory and practice of modern macroeconomics and social liberalism. "Lenin is said to have declared that the best way to destroy the capitalist system was to debauch the currency. By a continuing process of inflation, governments can confiscate, secretly and unobserved, an important part of the wealth of their citizens. By this method they not only confiscate, but they confiscate arbitrarily; and, while the process impoverishes many, it actually enriches some. The sight of this arbitrary rearrangement of riches strikes not only at security, but at confidence in the equity of the existing distribution of wealth. Those to whom the system brings windfalls, beyond their deserts and even beyond their expectations or desires, become "profiteers," who are the object of the hatred of the bourgeoise, whom the inflationism has impoverished, not less than of the proletariat. As the inflation proceeds and the real value of the currency fluctuates wildly from month to month, all permanent relations between debtors and creditors, which form the ultimate foundation of capitalism, become so utterly disordered as to be almost meaningless; and the process of wealth-getting degenerates into a gamble and a lottery.

Lenin was certainly right. There is no subtler, no surer means of overturning the existing basis of society than to debauch the currency. The process engages all the hidden forces of economic law on the side of destruction, and does it in a manner which not one man in a million is able to diagnose."

Source: John Maynard Keynes; 1919; The Economic Consequences of the Peace, Chapter VI; pages 235-236.

## Section 7

# **US Legislation Affecting Gold**

In 1966, Alan Greenspan wrote an essay about the relationship between Gold and Economic Freedom. The essay was published in Ayn Rand's *Objectivist* newsletter in 1966, and reprinted in her book, *Capitalism: The Unknown Ideal*, in 1967. Selected excerpts from this essay appear on the following page.

The full text of the essay may be found at:

http://www.ok-safe.com/files/documents/1/Gold\_and\_Economic\_Freedom\_an\_Article\_by\_Alan\_Greenspan\_1966.pdf

## **US LEGISLATION AFFECTING GOLD**

## Excerpts from "Gold and Economic Freedom"

An Essay by Alan Greenspan

The abandonment of the gold standard made it possible for the welfare statists to use the banking system as a means to an unlimited expansion of credit. They have created paper reserves in the form of government bonds which-through a complex series of steps-the banks accept in place of tangible assets and treat as if they were an actual deposit, i.e., as the equivalent of what was formerly a deposit of gold. The holder of a government bond or of a bank deposit created by paper reserves believes that he or she has a valid claim on a real asset. But the fact is that there are now more claims outstanding than real assets. The law of supply and demand is not to be conned. As the supply of money (or claims) increases relative to the supply of tangible assets in the economy, prices must eventually rise. Thus the earnings saved by the productive members of the society lose value in terms of goods. When the economy's books are finally balanced, one finds that this loss in value represents the goods purchased by the government for welfare or other purposes with the money proceeds of the government bonds financed by bank credit expansion.

In the absence of the gold standard, there is no way to protect savings from confiscation through inflation. There is no safe store of value. If there were, the government would have to make its holding illegal, as was done in the case of gold. If everyone decided, for example, to convert all their bank deposits to silver or copper or any other good, and thereafter declined to accept checks as payment for goods, bank deposits would lose their purchasing power and government-created bank credit would be worthless as a claim on goods. The financial policy of the welfare state requires that there be no way for the owners of wealth to protect themselves.

This is the shabby secret of the welfare statists' tirades against gold. Deficit spending is simply a scheme for the confiscation of wealth. Gold stands in the way of this insidious process. It stands as a protector of property rights.

Alan Greenspan, 1966

### The Gold Confiscation Executive Order of April 5, 1933

From: President of the United States Franklin Delano Roosevelt
To: The United States Congress
Dated: April 5, 1933

#### Presidential Executive Order 6102, Forbidding the Hoarding of Gold Coin, Gold Bullion, and Gold Certificates

By virtue of the authority vested in me by Section 5(b) of the Act of October 6, 1917, as amended by Section 2 of the Act of March 9, 1933, entitled

An Act to provide relief in the existing national emergency in banking, and for other purposes, in which amendatory Act Congress declared that a serious emergency exists,

I, Franklin D. Roosevelt, President of the United States of America, do declare that said national emergency still continues to exist and pursuant to said section do hereby prohibit the hoarding of gold coin, gold bullion, and gold certificates within the continental United States by individuals, partnerships, associations, and corporations and hereby prescribe the following regulations for carrying out the purposes of the order:

**Section 1:** For the purpose of this regulation, the term 'hoarding' means the withdrawal and withholding of gold coin, gold bullion, and gold certificates from the recognized and customary channels of trade. The term "person" means any individual, partnership, association, or corporation.

**Section 2:** All persons are hereby required to deliver on or before May 1, 1933, to a Federal Reserve bank or a branch or agency thereof or to any member bank of the Federal Reserve System all gold coin, gold bullion, and gold certificates now owned by them or coming into their ownership on or before April 28, 1933, except the following:

(a) Such amount of gold as may be required for legitimate and customary use in industry, profession, or art within a reasonable time, including gold prior to refining and stocks of gold in reasonable amounts for the usual trade requirements of owners mining and refining such gold.

### The Gold Confiscation Executive Order of April 5, 1933

- (b) Gold coin and gold certificates in an amount not exceeding in the aggregate \$100.00 belonging to any one person; and gold coins having recognized special value to collectors of rare and unusual coins.
- (c) Gold coin and bullion earmarked or held in trust for a recognized foreign government or foreign central bank or the Bank for International Settlements.
- (d) Gold coin and bullion licensed for other proper transactions (not involving hoarding) including gold coin and gold bullion imported for reexport or held pending action on applications for export license.
- **Section 3:** Until otherwise ordered any person becoming the owner of any gold coin, gold bullion, and gold certificates after April 28, 1933, shall within three days after receipt thereof, deliver the same in the manner prescribed in Section 2; unless such gold coin or gold bullion, and gold certificates are held for any of the purposes specified in paragraphs (a),(b), or (c) of Section 2; or unless such gold coin or gold bullion is held for purposes specified in paragraph (d) of Section 2 and the person holding it is, with respect to such gold coin or bullion, a licensee or applicant for license pending action thereon.
- **Section 4:** Upon receipt of gold coin, gold bullion, or gold certificates delivered to it in accordance with Section 2 or 3, the Federal Reserve bank or member bank will pay thereof an equivalent amount of any other form of coin or currency coined or issued under the laws of the United States.
- **Section 5:** Member banks shall deliver all gold coin, gold bullion, and gold certificates owned or received by them (other than as exempted under the provisions of Section 2) to the Federal Reserve banks of their respective districts and receive credit or payment thereof.
- **Section 6:** The Secretary of the Treasury, out of the sum made available to the President by Section 501 of the Act of March 9, 1933, will in all proper cases pay the reasonable costs of transportation of gold coin, gold bullion, and gold certificates delivered to a member bank or Federal Reserve bank in accordance with Sections 2, 3, or 5 hereof, including the cost of insurance, protection, and such other incidental costs as may be necessary, upon production of satisfactory evidence of such costs. Voucher forms for this purpose may be procured from Federal Reserve banks.

### The Gold Confiscation Executive Order of April 5, 1933

**Section 7:** In cases where the delivery of gold coin, gold bullion, or gold certificates by the owners thereof within the time set forth above will involve extraordinary hardship or difficulty, the Secretary of the Treasury may, in his discretion, extend the time within which such delivery must be made. Applications for such extensions must be made in writing under oath, addressed to the Secretary of the Treasury and filed with a Federal Reserve bank. Each application must state the date to which the extension is desired, the amount and location of the gold coin, gold bullion, and gold certificates in respect of which such application is made, and the facts showing extension to be necessary to avoid extraordinary hardship or difficulty.

**Section 8:** The Secretary of the Treasury is hereby authorized and empowered to issue such further regulations as he may deem necessary to carry the purposes of this order and to issue licenses thereunder, through such officers or agencies as he may designate, including licenses permitting the Federal Reserve banks and member banks of the Federal Reserve System, in return for an equivalent amount of other coin, currency, or credit, to deliver, earmark or hold in trust gold coin or bullion to or for persons showing the need for same for any of the purposes specified in paragraphs (a), (c), and (d) of Section 2 of these regulations.

**Section 9:** Whoever willfully violates any provision of this Executive Order or these regulations or of any rule, regulation or license issued thereunder may be fined not more than \$10,000, or, if a natural person, may be imprisoned for not more than ten years, or both; and any officer, director, or agent of any corporation who knowingly participates in any such violation may be punished by a like fine, imprisonment, or both.

This order and these regulations may be modified or revoked at any time.

/s/

Franklin D. Roosevelt President of the United States of America April 5, 1933

### The Trading with the Enemy Act of October 6, 1917

Section 5: (a) That the President, if he shall find it compatible with the safety of the United States and with the successful prosecution of the war, may by proclamation, suspend the provisions of this Act so far as they apply to an ally of the enemy, and he may revoke or renew such suspension from time to time; and the President may grant licenses, special or general, temporary or otherwise, and for such period of time and containing such provisions and conditions as he shall prescribe, to any person or class of persons to do business as provided in subsection (a) of Section Four hereof, and to perform any act made unlawful without such license in Section Three hereof, and to file and prosecute applications under Subsection (b) of Section Ten hereof; and he may revoke or renew such licenses from time to time, if he shall be of the opinion that such grant or revocation or renewal shall be compatible with the safety of the United States and with the successful prosecution of the war; and he may make such rules and regulations, not inconsistent with the law, as may be necessary and proper to carry out the provisions of this Act; and the President may exercise any power or authority conferred by this Act through such officer or officers as he shall direct.

If the President shall have reasonable cause to believe that any act is about to be performed in violation of Section Three hereof, he shall have authority to order the postponement of the performance of such act for a period not exceeding ninety days, pending investigation of the facts by him.

**Section 5: (b)** That the President may investigate, regulate, or prohibit, under such rules and regulations as he may prescribe, by means of licenses or otherwise, any transactions in foreign exchange, export or earmarkings of gold or silver coin or bullion or currency, transfers of credit in any form (other than credits relating solely to transactions to be executed wholly within the United States), and transfers of evidences of indebtedness or of the ownership of property between the United States and any foreign country, whether enemy, ally of enemy or otherwise, or between residents of one or more foreign countries, by any person within the United States; and he may require any such person engaged in any such transaction to furnish, under oath, complete information relative thereto, including the production of any books of account, contracts, letters, or other papers, in connection therewith in the custody or control of such person, either before or after such transaction is completed.

\* \* \* \* \* \* \* \* \*

Section 5 of the Trading with the Enemy Act (also known as "The Act of October 6<sup>th</sup>, 1917) was amended by the Emergency Banking Act for March 9, 1933 to include within its definition of the term "enemy of the United States" United States Citizens, thereby putting the Alien Property Custodian in equitable possession of the peoples' property.

### Executive Order 6102 of April 5, 1933

Forbidding the Hoarding of Gold Coin, Gold Bullion, and Gold Certificates

On March 9, 1933, the US Congress passed the Emergency Banking Act which empowered the President to call all gold into the Treasury, with heavy penalties for those who disobeyed the order. At that time, \$1,400,000,000 in gold (approximately 67.7 million troy ounces) was estimated to be in circulation, most of it hoarded. In the next 30 days, more than one-third of this was turned in to the US Treasury. On April 5, President Roosevelt issued an executive order requiring holders of gold to turn it into the US Treasury in exchange for paper currency under penalty of ten years imprisonment and/or a \$10,000 fine. US Department of Justice agents began visiting known hoarders who surrendered \$38,901,009 in gold. During the same period, unknown hoarders turned in more than \$300,000,000 in gold. Attorney General Homer Stille Cummings issued a threat of prosecution against recalcitrants who still held \$560,201,000. On August 28, President Roosevelt issued another order requiring every possessor of gold to register his or her holdings with the US Treasury before September 18. Those who failed to do so were also to be punished by ten years imprisonment and/or a \$10,000 fine.

One prosecution took place under the order, and in that case, the order was ruled invalid by Federal Judge John M. Woolsey, on the technical grounds that the Executive Order was signed by the President, not the Secretary of the Treasury as required.

The circumstances of the case were that a New York attorney, Frederick Barber Campbell held on deposit at the Chase National Bank over 5,000 ounces of gold. When Campbell attempted to withdraw the gold, Chase refused and Campbell sued Chase. A federal prosecutor then indicted Campbell on the following day (September 27, 1933) for failing to register his gold. Ultimately the prosecution of Campbell failed but the authority of the federal government to seize gold was upheld.

The case forced the Roosevelt administration to issue a new Executive Order under the signature of the Secretary of the Treasury, Henry Morgenthau, which was in force for a few months until the passage of the Gold Reserve Act on January 30, 1934.

### Gold Bullion Securities

a World Gold Council Initiative

Gold Bullion Securities, listed as of mid-2004 on the London and Australian Stock Exchanges, are intended to offer investors a means of investing in the gold bullion market without having to take physical delivery of the gold.

Each share of a Gold Bullion Security is equivalent to one-tenth of the U.S. dollar per ounce spot gold price. Gold Bullion Securities are intended to track the spot gold price and each security consists of: (i) a secured note of nominal value; and (ii) an entitlement to gold bullion held in the Gold Trust. Physical gold is held by the custodian, HSBC Bank USA, at its vault premises, or in the vaults of any sub-custodian, on behalf of the holders of Gold Bullion Securities.

Additional information on Gold Bullion Securities is contained on the website *www.goldbullion.com*.

**Sources:** www.goldbullion.com; Gold Bullion Securities prospectus.

# Reports arose that Executive Order 6102 led to the seizure or freezing of safe deposit boxes in 1933. Inaccurate versions of the text of the order also implied that US Internal Revenue Service agents oversaw the supposed freezing of safe deposit boxes. The actual text of the order contains no reference to IRS agents or to safe deposit boxes.

Reports of Safe Deposit Box Seizure

In practice, despite the threat of criminal prosecution, no safe deposit boxes were forcibly searched under the order and the few prosecutions that occurred in the 1930s for gold hoarding were carried out under different statutes. One of the few such cases occurred in 1936 when the safe deposit box of an individual who was not a US citizen, containing over 10,000 ounces of gold, was seized with a search warrant as part of a tax evasion prosecution. In 1933, approximately 500 tonnes of gold (16.1 million troy ounces) were turned in to the Treasury "voluntarily" at an exchange rate of \$20.67 per troy ounce.

Although the US Treasury did not seize safe deposit box contents, it nevertheless came into possession of a large number of them due to bank failures. During the 1930s over 3,000 banks failed and the contents of their safe deposit boxes were remanded to the custody of the US Treasury. If no one claimed the box, it remained in the possession of the US Treasury. As of October 1981, 1605 cardboard cartons remained in the basement of the US Treasury Building in Washington, DC, each containing the contents of an unclaimed safe deposit box.

### Reports of Safe Deposit Box Seizure

"Gold is mentioned 391 times in the Old Testament, Silver 117 times, and paper currency zero times"

-David A. Rosenberg Chief Economist & Strategist Gluskin Sheff & Associates Inc.

> Toronto, Canada May 31, 2010





A safety deposit box is an individuallysecured container, usually held within a larger safe or bank vault.

The Gold Reserve Act of 1934 made gold clauses unenforceable, and changed the value of the dollar in gold from \$20.67 to \$35.00 per ounce. This price remained in effect until August 15, 1971 when President Richard Nixon announced that the United States would no longer convert dollars to gold at a fixed value, thus abandoning the gold standard for foreign exchange.

The limitation on gold ownership in the U.S. was repealed after President Gerald R. Ford signed a bill legalizing private ownership of gold coins, bars and certificates by an act of Congress codified in Public Law 93-373 which went into effect December 31, 1974. Public Law 93-373 does not repeal the Gold Repeal Joint Resolution, which makes unlawful any contracts which specify payment in a fixed amount of money or a fixed amount of gold. That is, contracts are unenforceable if they use gold monetarily rather than as a commodity of trade. However, Act of Oct. 28, 1977, Public Law. No. 95-147, § 4(c), 91 Stat. 1227, 1229 (originally codified at 31 U.S.C. § 463 note, recodified as amended at 31 U.S.C. § 5118(d)(2)) amended the 1933 Joint Resolution and made it clear that parties could again include so-called gold clauses in contracts formed after 1977.

The great enemy of the truth is very often not the lie – deliberate, contrived and dishonest, but the myth – persistent, persuasive, and unrealistic.

John F. Kennedy (35<sup>th</sup> President of the US from 1961-1963) Yale University Commencement, June 11, 1962



Chusonji Temple was built as the foundation of a peaceful Buddhism-based realm. *Konjikido* is the Golden hall that is the temple's crown jewel and a Japanese National Treasure.

It was completed in 1124. The principal image is of Amida (Buddha of Infinite Light) and the magnificent decoration is meant to represent his Pure Land western paradise. The inlay work of iridescent shells, the Southeast Asian rosewood, and African ivory reflect the extensive trade network at that time.

The Konjikido is the only remaining example of a building from the Fujiwara-era to be found at Chuson-ji Temple.

#### Section 8

### Additional Information on Gold



Edward Hammond Hargraves (October 5, 1816 – October 29, 1891) was a gold prospector who claimed to have found gold in Australia in 1851, launching the Australian gold rush. Hargraves was convinced that the similarity in geological features between Australia and the California goldfields (from where he had just returned) boded well for the search of gold in his homeland.

Source: www.cultureandrecreation.gov.au.

MorganStanley SmithBarney

#### Introduction

Gold is a chemical element with the symbol Au (from Latin: aurum, "shining dawn") and an atomic number of 79. It has been a highly sought-after precious metal for coinage, jewelry, and other arts since the beginning of recorded history. The metal occurs as nuggets or grains in rocks, in veins and in alluvial deposits. Gold is dense, soft, shiny and the most malleable and ductile pure metal known. Pure gold has a bright yellow color and luster traditionally considered attractive, which it maintains without oxidizing in air or water. Gold is one of the coinage metals and has served as a symbol of wealth and a store of value throughout history. Gold standards have provided a basis for monetary policies. Gold has also been linked to a variety of symbolisms and ideologies.

As of 2009, a total of 161,000 tonnes (5,176,150,000 troy ounces) of gold have been mined in human history. Gold dissolves in mercury, forming amalgam alloys, but does not react with it. Gold is insoluble in nitric acid, which dissolves silver and base metals. This property is exploited in the gold refining technique known as "inquartation and parting." Nitric acid has long been used to confirm the presence of gold in various substances, and this is the origin of the colloquial term "acid test."

#### **Characteristics**

A single gram of gold can be beaten into a sheet of one square meter, or an ounce into 300 square feet. Gold leaf can be beaten thin enough to become translucent. The transmitted light appears greenish blue, because gold strongly reflects yellow and red. Such semi-transparent sheets also strongly reflect infrared light, making them useful as infrared (radiant heat) shields in visors of heat-resistant suits, and in sun-visors for spacesuits.

Gold readily creates alloys with many other metals. These alloys can be produced to modify hardness and other metallurgical properties, to control melting points or to create exotic colors (see below). Gold is a good conductor of heat and electricity and reflects infrared radiation strongly. Chemically, it is unaffected by air, moisture, and most corrosive reagents, and is therefore well suited for use in coins and jewelry and as a protective coating on other, more reactive, metals. However, it is not chemically inert.

Common colored gold alloys such as rose gold can be created by the addition of various amounts of copper and silver. Alloys containing palladium or nickel are also important in commercial jewelry as these produce white gold alloys. Less commonly, the addition of manganese, aluminum, iron, indium, and other elements can produce more unusual colors of gold for various applications.

#### **Monetary Exchange**

Gold has been widely used throughout the world as a vehicle for monetary exchange, either by issuance and recognition of gold coins or other bare metal quantities, or through gold-convertible paper instruments by establishing gold standards in which the total value of issued money is represented in a store of gold reserves.

However, the amount of gold in the world is finite and production has not grown relative to the growth rate of the world's economies. As of 2010, gold mining output had been declining for several years. With the sharp growth of economies in the 20th century, and the increasing buildup of foreign exchange balances, the world's gold reserves and gold trading markets have become a small fraction of the monetary value of trading in global asset markets and fixed exchange rates of currencies to gold became unsustainable. At the beginning of World War I, the warring nations moved to a fractional gold standard, inflating their currencies to finance the war effort. After World War II, gold was replaced by a system of convertible currency according to the Bretton Woods system. Gold standards and the direct convertibility of currencies to gold have been abandoned by world governments, being replaced by fiat currency in their stead. Switzerland was the last country to tie its currency to gold; it backed 40% of its value until 1999.

#### **History**

Egyptian hieroglyphs from as early as 2600 BC describe gold, which king Tushratta of the Mitanni claimed was "more plentiful than dirt" in Egypt. Egypt and especially Nubia had the resources to make them major gold-producing areas for much of history. The legend of the golden fleece may refer to the use of fleeces to trap gold dust from placer deposits in the ancient world. Gold is mentioned frequently in the Old Testament, starting with Genesis 2:11 (at Havilah) and is included with the gifts of the magi in the first chapters of Matthew in the New Testament. The Book of Revelation 21:21 describes the city of New Jerusalem as having streets "made of pure gold, clear as crystal." The southeast corner of the Black Sea was famed for its gold. Exploitation is said to date from the time of Midas, and this gold was important in the establishment of what is probably the world's earliest coinage in Lydia around 610 BC. From the 6th or 5th century BC, the Chu (state) circulated the Ying Yuan, one kind of square gold coin.

The Romans developed new methods for extracting gold on a large scale using hydraulic mining methods, especially in Spain from 25 BC onward and in Romania from 150 AD onward. One of their largest mines was at Las Medulas in León (Spain), where seven long aqueducts enabled them to sluice most of a large alluvial deposit. The mines at Roşia Montană in Transylvania were also very large, and until very recently, were still mined by opencast methods.

The Mali Empire in Africa was famed throughout the old world for its large amounts of gold. Mansa Musa, ruler of the empire (1312–1337) became famous throughout the old world for his great hajj to Mecca in 1324. When he passed through Cairo in July 1324, he was reportedly accompanied by a camel train that included thousands of people and nearly a hundred camels. He gave away so much gold that it depressed the gold price in Egypt for over a decade.

The European exploration of the Americas was fueled in no small part by reports of the gold ornaments displayed in great profusion by Native American peoples, especially in Central America, Peru, Ecuador, and Colombia. The Aztecs regarded gold as literally the product of the gods.

Gold has been used as a symbol for purity, value, royalty, and particularly roles that combine these properties. Gold as a sign of wealth and prestige was made fun of by Thomas More in his treatise *Utopia*. On that imaginary island, gold is so abundant that it is used to make chains for slaves, tableware, and lavatory-seats. When ambassadors from other countries arrive, dressed in ostentatious gold jewels and badges, the Utopians mistake them for menial servants, paying homage instead to the most modestly dressed of their party. It is estimated that 75% of all the gold ever produced has been extracted since 1910.

During the 19th century, gold rushes occurred whenever large gold deposits were discovered. The first documented discovery of gold in the United States was at the Reed Gold Mine near Georgeville, North Carolina in 1803. The first major gold strike in the United States occurred in a small north Georgia town called Dahlonega. Further gold rushes occurred in California, Colorado, the Black Hills, Otago, Australia, the Witwatersrand, and the Klondike.

#### **Occurrence**

Gold's atomic number of 79 makes it one of the higher atomic number elements which occur naturally. Similar to all elements with atomic numbers larger than iron, gold is thought to have been formed from a supernova nucleosynthesis process. These explosions scattered metal-containing dusts (including heavy elements such as gold) into the region of space from which they later condensed into our solar system and the Earth.

#### **Production**

Since the 1880s, South Africa has accounted for a large proportion of the world's gold supply, with about 50% of all the gold ever produced having come from South Africa. Production in 1970 accounted for 79% of the world supply, reaching close to 1,000 tons (32,150,000 troy ounces). By 2007, however, production amounted to just 272 tons (8,744,800 troy ounces). This sharp decline was due to the increasing difficulty of extraction, changing economic factors affecting the industry, and tightened safety measures. In 2007, China with 276 tons (8,873,400 troy ounces) overtook South Africa as the world's largest gold producer, the first time since 1905 that South Africa had not been the largest.

Other major producers include the United States, Australia, Russia, and Peru. Mines in South Dakota and Nevada produce approximately two-thirds of the gold mined in the United States. Gold is so stable and so valuable that it tends to be practically always recovered and recycled. There is no true consumption of gold in the economic sense; the global stock of gold grows at a fairly slow annual rate while ownership shifts from one party to another.

Source: "China pushes to top as world's largest gold miners," Laura Mandaro; "Removal of Barriers to the Abatement of Global Mercury Pollution from Artisanal Gold Mining," Christian Beinhoff.

#### **Consumption**

India is the world's largest consumer of gold, as Indians buy about 25% of the world's gold, purchasing approximately 800 tonnes of gold (25,720,000 troy ounces) every year.

#### **Symbolism**

Gold has been highly valued in many societies throughout the ages. In keeping with this, gold has often had a strongly positive symbolic meaning closely connected to the values held in highest esteem within a given society. Gold may symbolize power, strength, wealth, warmth, happiness, love, hope, optimism, intelligence, justice, balance, perfection, summer, harvest, and the sun.

Great human achievements are frequently rewarded with gold, in the form of gold medals, golden trophies, and other decorations. Winners of athletic events and other graded competitions are usually awarded a gold medal (e.g., in the Olympic Games). Many awards such as the Nobel Prize are made from gold as well. Other award statues and prizes are depicted in gold or are gold plated (such as the Academy Awards, the Golden Globe Awards, the Emmy Awards, the Palme d'Or, and the British Academy Film Awards).

Medieval kings were inaugurated under the signs of sacred oil and a golden crown, the latter symbolizing the eternal shining light of heaven and thus a Christian king's divinely inspired authority. Wedding rings have long been made of gold. Gold is long lasting and unaffected by the passage of time and contributes to the ring symbolism of eternal vows before god and/or the sun and moon and the perfection the marriage signifies. In Orthodox Christianity, the wedded couple is adorned with a golden crown during the marriage ceremony, an amalgamation of symbolic rites.

#### **State Emblem and State Mineral**

In 1965, the California Legislature designated gold "the State Mineral and mineralogical emblem." In 1968, the Alaska Legislature named gold "the official state mineral."

Source: "India's love affair with gold tarnishing," Financial Times; "Gold: Why China outbeats India in gold reserves," Nandita Jain; "Alaska statutes," www.legis.state.ak.us; California Government Code selection.

### The California Gold Rush and the Panic of 1857

#### SS Central America



- The SS Central America, sometimes called the Ship of Gold, was a 280-foot (85 m) sidewheel steamer that operated between Central America and the eastern coast of the United States during the 1850s.
- She was originally named the SS George Law.
- The ship sank in a hurricane in September 1857, along with 400 passengers and crew and a significant quantity of gold, contributing to the Panic of 1857.

(please also see page 10)

MorganStanley SmithBarney In 1847, the United States produced a mere 43,000 ounces of gold, primarily as a byproduct of base-metal mining. By 1853, California alone produced more than three million ounces, then worth some \$65 million. The total revenue of the US federal government in 1853 amounted to \$61.5 million.

The California gold rush moved the country's political center of gravity sharply westward. About 180,000 people left the East Coast for California in 1849 and 1850, representing approximately 1% of the country's population.

The gold rush produced a national economic boom. Thanks to the new gold supply, the government and private mints greatly increased the amount of gold coinage. As California gold flowed into bank reserves, the banks increased the amount of banknotes in circulation. Credit became easy. Railroad mileage tripled in the 1850s; pigiron production increased 14-fold.

Because the United States had no central bank, there was no controlling the national exuberance. By 1857, as the amount of gold coming out of California began to wane, so did the boom.

As the summer progressed, prices on Wall Street began to tumble and some of the weaker banks and brokerage houses collapsed. But the retreat was orderly until mid-September, when a massive shipment of California gold failed to show up in New York. The steamship Central America had been on the New York-Panama run ever since it had been built in 1852. The ship had carried prodigious quantities of gold on many voyages.

On September 3, 1857, the SS Central America left Panama headed for New York, a trip that usually took about 10 days. On September 11, however, 200 miles off Charleston, S. C., the Central America was hit by a hurricane and sank. More than 400 people lost their lives. Of far more concern to Wall Street, however, were the four tonnes (128,604 troy ounces) of California gold, then worth more than \$2.6 million, in the vessel's hold. When news of the loss of this gold, and the badly needed liquidity it would have provided, reached the Street, the panic of 1857 ensued, a panic that quickly spread to Europe in what was the first genuinely international financial crisis. The banks that survived suspended specie payments, and the economy plunged into a depression that lasted until the outbreak of the Civil War.

In the 1980s, a revolution in underwater technology made search and recovery from deep-sea shipwrecks possible. Using a Remotely Operated Vehicle, and sophisticated statistical analysis, a group of engineers and investors found the ship on September 11, 1987, 130 years after its sinking. Most of the gold was recovered. The 39 successors to the original insurance companies that had paid losses claimed ownership and sued. The recovery group argued that it was abandoned property. Nine years later, the courts awarded the recovery group 92% of the gold; the insurers received 8%.

In 1857, gold was worth \$20.67 an ounce. Many of the coins and bars recovered from the SS Central America have a numismatic value far above their gold content. A gold bar from the SS Central America weighing about 80 pounds was sold at auction in 2001 for \$8 million, 10 times its pure gold value.

Source: Adapted from "The Immortal Metal," by John Steele Gordon, in Barron's, January 28, 2008

"Like gold, US dollars have value only to the extent that they are strictly limited in supply. But the US government has a technology, called a printing press (or, today, its electronic equivalent), that allows it to produce as many US dollars as it wishes at essentially no cost. By increasing the number of US dollars in circulation, or even by credibly threatening to do so, the US government can also reduce the value of a dollar in terms of goods and services, which is equivalent to raising the prices in dollars of those goods and services. We conclude that, under a papermoney system, a determined government can always generate higher spending and hence positive inflation."

#### Ben S. Bernanke

Before the National Economists Club, Washington D.C.

November 21, 2002

#### MorganStanley SmithBarney

#### **ADDITIONAL INFORMATION ON GOLD**

### When Wall Street Rescued the US Treasury

- In the 1890s, the US Congress was trying to have it both ways with regard to monetary policy, mandating the gold standard, which makes inflation impossible, and the free coinage silver standard, which guaranteed inflation.
- Britain had been on the gold standard since 1821, with the Bank of England willing to buy or sell unlimited quantities of pounds sterling at the rate of three pounds, 17 shillings, 10 and a half pence for an ounce of gold, a rate established in 1694 by Sir Isaac Newton, Master of the Mint.
- In 1873, the US set the dollar at \$20.67 per ounce of gold.
- The Civil War forced the US off reliance on gold when the government issued \$450 million in so-called greenbacks. How, when, and whether to return to the gold standard was one of the big political issues of the post Civil War era. The Northeast, where most of the country's industrial and financial establishment was located, wanted to return to the gold standard as soon as possible. Farmers in the South and West hated the gold standard, as farmers tend to be chronic debtors and thus benefit from inflation.
- Congress passed the law requiring a return to the gold standard by 1879, but in 1878 it passed the Bland-Allison Act, requiring the Treasury to purchase \$2 million to \$4 million worth of silver every month and turn it into coins at the ratio of 16-to-1.
- Congress mandated in 1879 that the Treasury keep at least \$100 million in gold on hand to meet any demand for it, and thus maintain the gold standard.
- By 1890, the market price of the metal had fallen to 22-to-1. But the Sherman Silver Act of 1890 required the Treasury to buy 4.5 million ounces a month and turn it into coins at the same 16-to-1 ratio.

Source: "When Wall Street Rescued the Treasury," by John Steele Gordon, in Barron's, October 20, 2008.

#### The Georgia State Capitol



The Georgia State Capitol, in Atlanta, Georgia, is an architecturally and historically significant building.

Originally constructed from terra cotta and covered with tin, the present dome of the building is gilded with native gold leaf from near Dahlonega in Lumpkin County, where the first American gold rush occurred in the 1830s.

#### **Massachusetts State House**



The dome of the Massachusetts State House was first painted gray and then light yellow before being gilded with gold leaf in 1874.

#### MorganStanley SmithBarney

#### **ADDITIONAL INFORMATION ON GOLD**

### When Wall Street Rescued the US Treasury

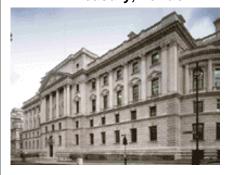
- People began spending silver, the bad money, and hoarding gold, the good money, which they could obtain by withdrawing it from the US Treasury. After the stock market crash of 1893, which marked the beginning of a major depression, the trickle of gold out of the US Treasury turned into a flood. Congress quickly repealed the Sherman Silver Act, but people had lost faith in the dollar and the Treasury's ability to maintain the gold standard. Bonds were issued to buy more gold at \$100 million, but the metal continued to flow out as people increasingly turned in dollars for gold.
- By January 1895, the US gold reserve was down to \$64 million and falling fast. Congress, dominated by opponents of the gold standard, refused to allow another bond issue to replenish the reserve.
- As the months progressed, the amount of gold remaining in the New York Sub-Treasury fell to \$9 million.
- Selling more bonds in the domestic market to buy gold would not do any good, J.P. Morgan said, as the gold would just recycle back out of the Treasury. Instead, he and the Rothschilds, the two most powerful forces in international banking, would buy for the government's account 3.5 million ounces of gold in Europe. To pay for it, Morgan had uncovered an obscure Civil War-era law allowing the government to issue bonds to buy coin with congressional action.
- By June 1895, the US Treasury had \$107.5 million in gold on hand. Confidence in the US Treasury was restored, and economic recovery had begun.

Source: "When the Wall Street Rescued the Treasury," by John Steele Gordon, in Barron's, October 20, 2008.

#### **ADDITIONAL INFORMATION ON GOLD**

### Britain's 1999-2002 Sale of Gold Reserves

#### **HM Treasury, London**



- The UK Treasury Main Building, often referred to as the Government Offices Great George Street ('GOGGS'), was designed by John Brydon and was built between 1898 and 1917.
- It was originally built as offices for the Board of Education, the Local Government Board, and the local Ministry of Works Office; HM Treasury moved into the building in 1940.
- New office accommodations for the UK Treasury at one Horse Guards Road, Whitehall, opened on September 25, 2002.

In 1999, United Kingdom Chancellor of the Exchequer Gordon Brown was accused of trying to take Britain into the European single currency (the Euro) by stealth after surprising London's financial sector with the announcement that he was planning to sell more than half of Great Britain's gold reserves.

The 415 tonnes (13.3 million troy ounces) of gold reserves were to be converted into euros, dollars, and yen in the post-1999

period. The sale led to the proportion of the UK's foreign currency reserves held in gold falling from 17 per cent to 7 per cent. The Chancellor's announcement triggered a fall in the price of gold and provoked the Tories and Euro sceptic observers to claim that the decision may have been politically motivated to secretly prepare for Britain's possible entry into the Euro.

Their suspicions were fuelled by the timing of the announcement on a Friday afternoon, when most Members of Parliament were away from Westminster and news coverage was dominated by the outcome of the elections of the Scottish parliament, Welsh Assembly, and English local councils.

The UK treasury issued a bland, three-paragraph statement, saying that the sale was intended to achieve "better balance" in Britain's reserves by increasing the percentage held in currency rather than gold, but gave no suggestion that the move might be linked to preparations for joining the Euro. Sources in the gold market claimed that Mr. Brown had acted against the advice of Eddie George, the Governor of the Bank of England, but this could not be confirmed.

Financiers in the city of London greeted the news with dismay. Haruko Fukuda, chief executive of the World Gold Council, said: "This is a political decision, probably in preparation for joining the Euro. This move appears to be pre-empting the promised referendum. Gold has special characteristics. It has been held as a reserve for thousands of years. Its value does not rely on anybody else's promise to pay, unlike cash, and it builds public confidence."

Francis Maude, the shadow chancellor, said: "Gordon Brown is trying to drag Britain into the single currency by stealth by making it appear inevitable. This could be another step along that road. It is time Gordon Brown started running the Britain economy in the interests of Britain and not in the interests of Europe."

After the sale, Britain will hold 300 tonnes (9.6 million troy ounces) of gold bullion. Around 40 per cent of the gold sold was earmarked to be converted in euros, 40 per cent into US dollars, and the remaining 20 per cent into yen.

The sale of the reserves was seen in Parliament as a further attempt by the UK Treasury to bring Britain's economy into line with those countries already signed up to participate in the Euro. The Chancellor has made no secret of his desire to put Britain into a position where it could join the single currency, probably by 2002, with a minimum of financial upheaval.

The European Central Bank, which administers the Euro, encouraged countries joining the single currency to sell more of their large gold reserves. It considers gold as a bad investment. The price peaked at \$835 an ounce in 1980, but by 1999, it had been struggling along at around \$300 for approximately 10 years.

A spokesperson for the UK Treasury said: "This has nothing whatsoever to do with joining the Euro. It is about efficient asset allocation with our country's foreign exchange reserves." The sale will bring to an end the Bank of England's 300-year-old practice of holding gold as a significant part of Britain's foreign exchange reserves.

Britain's gold sales took place via a series of auctions that started in July 1999 and concluded in March 2002, in which 395 metric tons (12.7 million troy ounces) were sold at an average price of slightly less than \$275 per troy ounce.

Source: Adapted from The Daily Telegraph, May 8,1999.

### Switzerland and Gold

As of April 1999, Switzerland had 2,590 tons of gold (83.3 million troy ounces) in its official reserves, making it the world's fourth biggest individual official holder of bullion, after the Eurosystem, the US, and the IMF. As of April 1999, gold represented 38.3 per cent of the reserves of the Swiss National Bank (SNB). Many people, both inside and outside Switzerland, had long assumed that the strength of the country's currency and its economy owed much to its considerable reserves of gold. The link between gold and the Swiss currency had been enshrined in the country's constitution for more than a century. The media outside Switzerland were therefore taken aback when, on October 24, 1997, a joint group of the Swiss Finance Ministry and the SNB produced a report about reforming the country's currency laws which, among other matters, recommended that some 1,400 metric tons (45.0 million troy ounces) of the gold reserves should be sold.

The Federal Ministry of Finance and the SNB, in June 1996, formed a joint Working Party. This Working Party recommended the passage of temporary legislation – pending a necessary revision to the constitution – lowering the Swiss gold-currency ratio from 40 per cent to 25 per cent. This legislation came into effect on November 1, 1997.

With the end of Article 39, section 7, it became clear that the link between the Swiss franc and gold would be severed. However, within Switzerland itself little importance was attached to the move. The reason was because this link had not been in effect for many years, as Switzerland's Society for the Promotion of the Swiss Economy (a body representing the country's employers) pointed out:

"In reality, this linkage to gold ceased a long time ago. The last time the SNB's redemption obligation was actually honoured was in 1936. Gold has for a long time been a normal commodity and the Swiss franc the legal means of payment. As part of the review of the Constitution, therefore, the Swiss franc's linkage to gold is also to be abolished in law. This will allow for a more realistic market valuation of the SNB's gold reserves and greater flexibility in their use."

When Switzerland joined the International Monetary Fund (IMF) in 1992 (following a national referendum) it promised to bring its laws into compliance with the IMF's Articles, including those which allow a country to set the exchange value of its currency through any means other than tying it to gold. It was not clear that the partial gold backing of the Swiss franc was a breach of the IMF's Articles forbidding countries to peg their currencies to gold, but it was seen as contrary to their spirit. The proposed amendments to the monetary Articles of the constitution were designed partly to fulfill this pledge.

### Switzerland and Gold

The new legislation was a direct consequence of the Swiss referendum and represented "housekeeping" legislation, ratifying in law what had been approved for the new constitution. The Bill contained the following salient points:

- It ratified the Swiss franc as the country's official means of payment;
- It set out the areas of competence of the Federal Council, the Department of Finance, and the SNB;
- It contained a number of details concerning the issuing and withdrawal of bank notes;
- It did away with Article 19 of the law concerning the SNB, which stipulates that 25 per cent of money in circulation had to be backed by gold;
- It did away with Articles 20-22 of the law concerning the SNB, which regulated the exchange of banknotes and coins with gold. The new legislation concerning currency and means of payment made no mention of gold at all.

Source: "Switzerland's Gold." World Gold Council.

Swiss voters approved a new Constitution in April 1999 that eliminated the traditional requirement for the country's currency to be backed by gold. The modernization of the 125-year old Constitution, which was backed by all the major Swiss political parties and was expected to pass easily, came down to a closer-than-expected vote.

Some 59 percent of voters casting ballots, 969,400 people, approved the new document. In addition to abolishing the gold standard for the Swiss franc, the Constitution enshrined new rights in law, including the right to strike and the principle of equal opportunities for the handicapped.

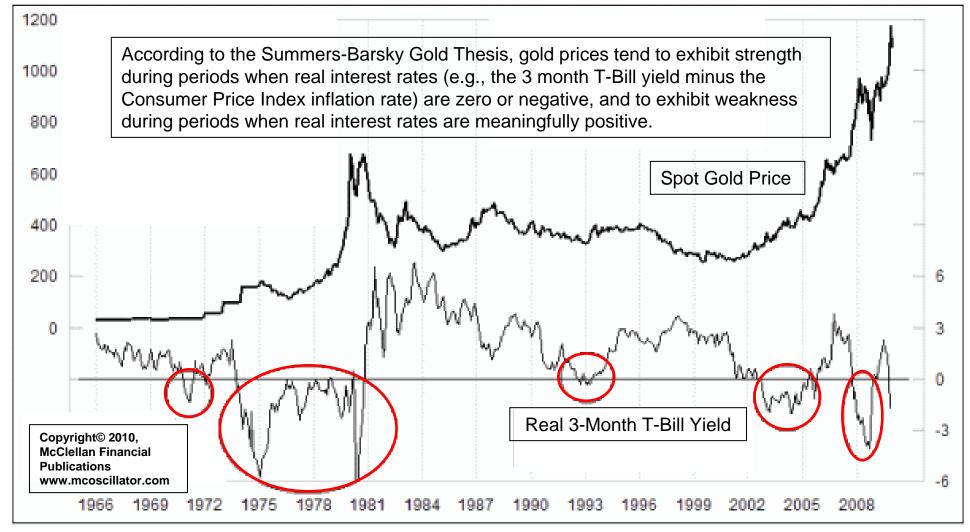
But 12 of Switzerland's 26 states, known as cantons, voted against the proposal, which needed a majority of both voters and states to pass. About 669,200 people – 41 percent – rejected it.

The Swiss federal Constitution was last overhauled in 1874, although it had been modified 140 times since then.

Source: "Swiss Narrowly Vote to Drop Gold Standard," April 18, 1999, The New York Times



### Gold Performance Relative to Real Interest Rates



Note: Data are as of January 8, 2010.



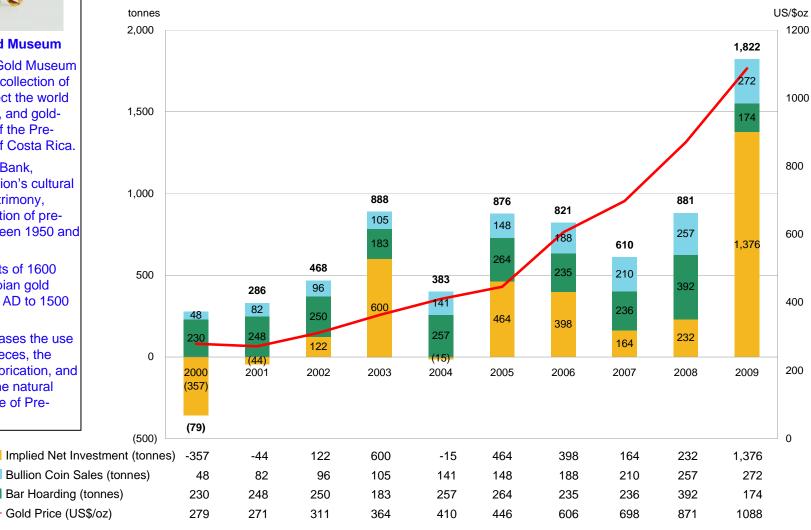
#### **Pre-Columbian Gold Museum**

- The Pre-Columbian Gold Museum has an extraordinary collection of gold objects that reflect the world view, social structure, and goldworking techniques of the Pre-Columbian peoples of Costa Rica.
- Costa Rica's Central Bank, concerned for the nation's cultural and archeological patrimony, assembled the collection of pre-Columbian gold between 1950 and 1974.
- The collection consists of 1600 pieces of Pre-Columbian gold work dating from 500 AD to 1500 AD.
- The collection showcases the use and function of the pieces, the technology of their fabrication, and their relationship to the natural world and the daily life of Pre-Columbian societies.

#### ADDITIONAL INFORMATION ON GOLD

### Gold Investment Flows

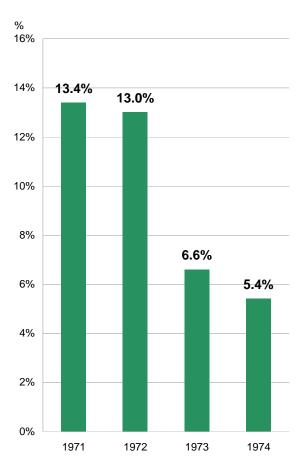
#### **Total Gold Investment Flows compared to the Gold Price**



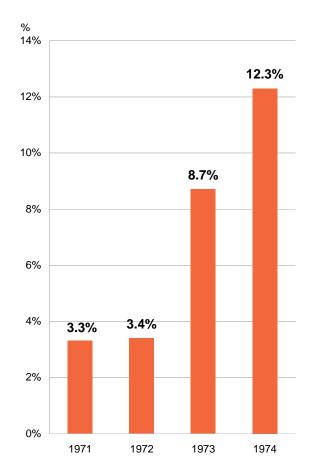
Source: Morgan Stanley & Co. Incorporated.

### Money Supply and Gold Price vs. Inflation, 1971-1974

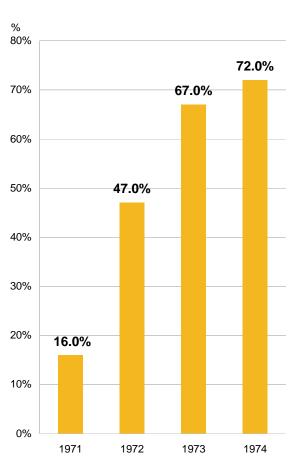
#### Money Supply (M2)



#### **US Consumer Price Inflation**



#### **Gold Price**



Source: Bloomberg LLC.

#### Sutter's Mill



- Sutter's Mill was a sawmill owned by 19th century pioneer John Sutter. It was located in Coloma, California, on the banks of the American River.
- On January 24, 1848, James Marshall, an employee/partner of Sutter's, found several flakes of gold that began the transformation of California from a sleepy outpost to a bustling center of activity.
- Sutter and Marshall tried to keep the discovery secret, but eventually the word got out.
  - During the next seven years, approximately 300,000 people came to California to seek their fortunes mining for gold or selling supplies such as picks, shovels, and dungarees to the gold prospectors.

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#### **ADDITIONAL INFORMATION ON GOLD**

### Operation of the Gold Market

#### **Over-the-Counter Market**

- The OTC gold market includes spot, forward, and options and other derivative transactions conducted on a principal-to-principal basis.
- While this is a global 24-hour per day market, its main centers are London, New York and Zurich.
- Ten members of the London Bullion Market Association (LBMA), the London-based trade association that acts as the coordinator for activities conducted on behalf of its members and other participants in the London bullion market, act as OTC market-makers, and most OTC market trades are cleared through London.

#### **Futures Exchanges**

- The most significant gold futures exchanges are the COMEX, operated by Commodities Exchange, Inc., a subsidiary of New York Mercantile Exchange, Inc., and the Tokyo Commodity Exchange, also known as TOCOM.
- The COMEX is the largest exchange in the world for trading metals futures and options and has been trading gold since 1974, while the TOCOM has been trading gold since 1982.

#### **London Bullion Market**

- A primary function of the LBMA is its promotion of refining standards by maintenance of the "London Good Delivery Lists," which are the lists of LBMA accredited smelters and assayers of gold.
- Twice daily during London trading hours, a "fix" takes place which provides reference gold prices for that day's trading.
  - These are referred to as the morning (A.M.) London fix and afternoon (P.M.) London fix. Many longterm contracts are priced based on the London gold fix.

#### **Market Regulation**

- In the United Kingdom, responsibility for the regulation of the financial market participants falls under the authority of the United Kingdom's **Financial Services Authority**.
- In the United States, Congress created the CFTC in 1974 as an independent agency with the mandate to regulate commodity futures and options markets in the United States.
- Market integrity on the TOCOM is preserved by the TOCOM's authority to perform financial and operational surveillance.
  - To act as a Futures Commission Merchant Broker a license must be obtained from Japan's Ministry of Economy, Trade and Industry (METI).

Source: Sprott Physical Gold Trust, Form F-1, December 2009



- The roots of the IRS go back to the Civil War when President Lincoln and Congress, in 1862, created the position of Commissioner of Internal Revenue and enacted an income tax to pay war expenses.
- Gold and silver receive special treatment in the tax code.
   Considered collectibles, not capital assets, they do not qualify for the maximum tax rate on long-term capital gains.
- Instead, gains on the sale of gold and silver investments, including gold- and silverbacked ETFs, and gold bullion and coins (except certain USissued coins), are taxed at a collectibles tax rate when such investments have been held for more than a year.

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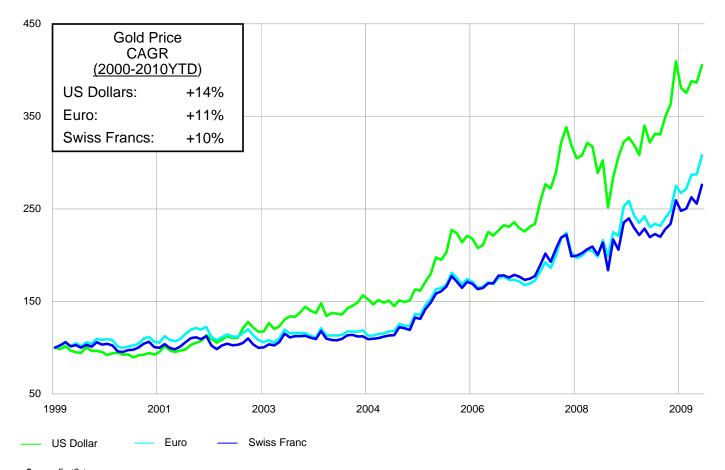
#### ADDITIONAL INFORMATION ON GOLD

### Gold Prices in Select Currencies

2000-2010YTD(1)

#### Indexed Performance Since 2000–2010YTD

Gold Price in US Dollars, Euro, and Swiss Francs



Source: FactSet.

#### Note:

1. Data are as of April 21, 2010.

### Gold and the Olympic Games

#### The 2004 Athens Olympic Medals

Greece was the birthplace of the original Olympic Games and the first modern Olympic Games were held in Athens in 1896. On August 13, 2004, the Olympic Games returned to Greece with Athens hosting the Games of the XXVIII Olympiad.

The 2004 Olympic medals depict the Greek goddess of victory, Nike, flying into the stadium to crown the best athlete. The Olympic Organizing Committee chose to feature the Panathenic stadium, where the Games were held in 1896.

The reverse side of the medal features three items of importance: (i) the eternal flame, lit in Olympia and carried through five continents; (ii) the opening lines of Pindar's Eighth Olympic Ode, composed in 460 BC to honor the victory of Alkimedon of Aegina in wrestling; and (iii) the Athens 2004 Olympic Games emblem.

The total number of medals produced for the 2004 Athens Olympic Games was 1,130 gold, 1,130 silver, and 1,130 bronze.

Source: www.olympic.org.



Silver medal awarded to second place victors at the XXVIII Olympiad 2004 Olympic Games in Athens, Greece.







Bronze medal awarded to third place victors at the XXVIII Olympiad 2004 Olympic Games in Athens, Greece.

#### Gold Medals from the Olympic Games from 1984 through 2008



Bronze medal

1896 Olympic

Greece

awarded to third

place victors at the

Games in Athens.

XXIX Olympiad Beijing, China (2008)



XXVIII Olympiad Athens, Greece (2004)



XXVII Olympiad Sydney, Australia (2000)



XXVI Olympiad Atlanta, Georgia (1996)



XXV Olympiad Barcelona, Spain (1992)



XXIV Olympiad Seoul, Korea (1988)



XXIII Olympiad Los Angeles, California (1984)

**ADDITIONAL INFORMATION ON GOLD** 

### The History of Change in the Western World

Economic Patterns of Life and their Cultural, Social, and Political Effects

Periods of Equilibrium (A Belief in Order and Harmony and the A **Triumph of Progress and Reason):** 

1. The High Middle Ages (Thirteenth Century)



2. The Renaissance (Fifteenth and Sixteenth Century)



3. The Enlightenment (Eighteenth Century)



4. The Victorian Age (Mid-and Late Nineteenth Century)



5. The Modern Era (Late Twentieth Century)



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Edvard Munch's The Scream

Raphael Sanzio's School of Athens

William Blakes's *Newton* 

**Characteristics of Periods of Price Revolution: Persistent Periods of** Rising Prices Accompanied by Social Upheaval

- Continuing inflation
- Falling real wages
- Rising returns to capital
- Widening gaps between rich and poor
- Increasing instability
- Family disintegration
- Demographic contraction
- Cultural sense of alienation, anomie, confusion, and despair
- Political and social unrest

Periods in the Aftermath of a Price **Revolution Wave:** 

1. War, Famine, and Plague



2. Religious Wars and Social

Thirty Years' War 3attle of Breitenfeld

Unrest

(Seventeenth Century)



3. Social and Political Revolutions

> (Late Eighteenth Century and Early Nineteenth Century)



4. Great Depression and **Totalitarianism** 



**Characteristics of Post-Crisis Eras: Stable Prices and Social Calm** 

- Price equilibrium
- Rising real wages
- Falling returns to capital
- Increased economic equality
- Accelerating population growth
- Increasing aggregate demand
- Economic advancement

Source: Fischer, David Hackett, The Great Wave: Price Revolutions and the Rhythm of History; wikipedia.org (Images)

 The sources listed here may offer additional information about precious metals.

#### **Purity of Gold Jewelry**

The method used throughout the world to classify the purity and hardness of a piece of gold jewelry is to quote the number of Carats (Karats). The following table outlines the number of carats with the corresponding purity level of the gold:

24 Carat = 100.00% pure 18 Carat = 75.00% pure 14 Carat = 58.33% pure 12 Carat = 50.00% pure 10 Carat = 41.67% pure 9 Carat = 37.50% pure

Source: www.finders.com.

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Golden Gate Bridge, San Francisco.

#### **Golden Pavilion**



Kinkaku-ji or formally Rokuon-ji is a Zen Buddhist temple in Kyoto, Japan. The Golden Pavilion, or Kinkaku, is a threestory building on the grounds of the Rokuon-ji temple complex. The top two stories of the pavilion are covered with pure gold leaf.

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- Bombay Bullion Association.
- Monex Deposit Company. www.monex.com



Panoramic view of the outlet of the Golden Horn in Istanbul, as seen from the Galata Tower.

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Treasury Inflation Protection Securities' (TIPS) coupon payments and underlying principal are automatically increased to compensate for inflation by tracking the consumer price index (CPI). While the real rate of return is guaranteed, TIPS tend to offer a low return. Because the return of TIPS is linked to inflation, TIPS may significantly underperform versus conventional U.S. Treasuries in times of low inflation.

The indices are unmanaged. An investor cannot invest directly in an index. They are shown for illustrative purposes only and do not represent the performance of any specific investment.

Besides the general risk of holding securities that may decline in value, closed-end funds may have additional risks related to declining market prices relative to net asset values (NAVs), active manager underperformance, and potential leverage. Some funds also invest in foreign securities, which may involve currency risk.

Investing in foreign emerging markets entails greater risks than those normally associated with domestic markets, such as political, currency, economic and market risks.

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Because of their narrow focus, sector investments tend to be more volatile than investments that diversify across many sectors and companies.

Value investing does not guarantee a profit or eliminate risk. Not all companies whose stocks are considered to be value stocks are able to turn their business around or successfully employ corrective strategies which would result in stock prices that do not rise as initially expected.

Growth investing does not guarantee a profit or eliminate risk. The stocks of these companies can have relatively high valuations. Because of these high valuations, an investment in a growth stock can be more risky than an investment in a company with more modest growth expectations.

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