



Key To the Gold Vault

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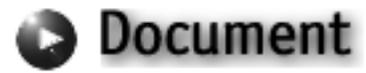
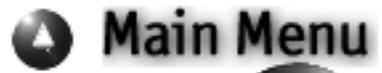
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Unlocks some of the mysteries of gold, exposes its glamorous past, and reveals the work-a-day operations of the New York Fed's gold vault. (free up to 50 copies)



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KEY TO THE GOLD VAULT

Visitors to lower Manhattan usually are impressed by the financial community's frenzied pace. The people working in its offices and the pedestrians on its streets never appear to slow down. However, one of the financial district's least hectic places provides one of its most impressive sights: the gold in the vault of the Federal Reserve Bank of New York.

Resting on the bedrock of Manhattan Island, eighty feet below street level, is the world's largest known accumulation of gold. The gold vault of the Federal Reserve Bank of New York attracts more than 22,000 visitors a year. The Bank does not own the gold; it serves as its custodian. Almost all of the gold bars or bullion belongs to foreign central banks and international monetary organizations.

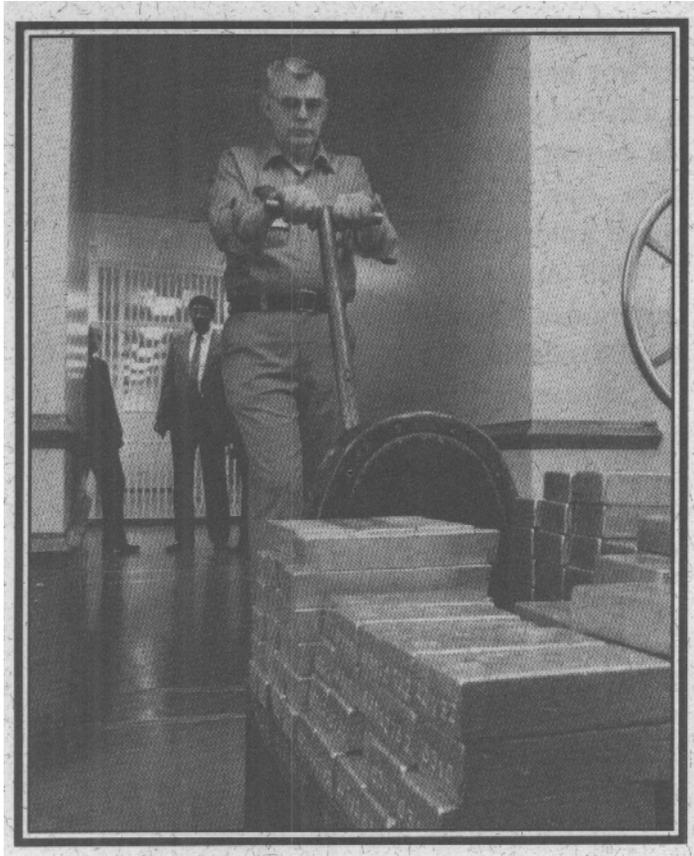
The gold is secured in a most unusual vault, an impressive chamber nearly half the length of a football field. It contained approximately 315 million troy ounces of gold early in 1991, comprising approximately 28 percent of the world's official monetary gold reserves. The value of the gold in the vault was \$13 billion at the official U.S. government price of \$42.2222 per troy ounce, or about \$126 billion at a market price of \$400 an ounce. At the current official U.S. government price, one of the vault's 400 troy ounce gold bars is valued at about \$17,000. At a market price of \$400 a troy ounce, the same bar is worth about \$160,000.

The reasons why foreign governments store their gold at the Federal Reserve Bank of New York can be summarized in three words: confidence, convenience and centrality.

Confidence results from the Bank being part of the Federal Reserve System, an agency of the U.S. government and the nation's central bank. The political stability and economic strength of the United States, as well as the physical security provided by the Bank's vault are important factors.

Convenience accrues from the international operations of the Federal Reserve Bank of New York. Besides handling foreign financial transactions for the U.S. Department of the Treasury and the Federal Reserve System, the Bank, acting as an agent, often executes financial transactions in the United States for foreign central banks.

Centrality is due to the Bank's location. Having gold deposited in the trade and financial capital of the world's largest economy enables international payments to be made easily, quickly and inexpensively. The ability to make gold transfers between nations within the confines of the vault merely by moving bars from the compartment of one country to another was a major attraction.



GOLD STANDARD

The gold bullion in the vault is part of the official monetary reserves of governments and central banks. It is largely a relic of eras when gold was used to meet international payments obligations and when the gold standard and gold exchange standard were used in establishing stable values for national currencies.

Under the gold standard, which was adhered to by most countries between 1870 and 1914 and between 1925 and 1931, countries valued their currencies in terms of a specified amount of gold. Each nation was expected to maintain convertibility between its currency and gold by purchasing or selling gold in exchange for its currency at a specified "official" price.

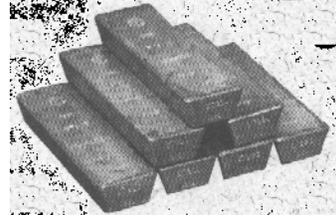
The United Kingdom was the first modern nation to link its money exclusively to gold through a series of laws passed between 1816 and 1821. The laws allowed gold and gold coins to circulate freely as money, provided for the interconvertibility of gold and paper currency issued by the Bank of England, and limited the circulation of all non-gold linked money. Although the United States defined the value of the dollar in terms of gold as early as 1792, it didn't adopt an exclusive "gold standard" until 1900.

In response to World War I and the Great Depression, holders of the currencies of nations on a gold standard purchased large amounts of gold, draining official reserves. This caused the gold standard to be abandoned by most countries in 1914 and again in the early 1930s.

Some countries adopted the gold exchange standard after World War I. Under this system, which was designed to conserve gold, the currencies of countries with substantial gold reserves became the international reserves of other countries. After other countries ceased to exchange gold for their own currencies, the United States became the sole supplier of reserve currency.

Although the United States continued to sell gold to foreign official holders of dollars, it prohibited its citizens from buying, selling and holding gold between 1934 and 1971. This

was the result of a law enacted in 1933 that required individuals to turn over all of their gold bullion, coins and certificates to the Treasury in exchange for dollars. The measure prevented hoarders from profiting when Congress devalued the dollar in 1934, an action that raised the official price of gold by over 65 percent. Gold coins and certificates considered collectors' items were exempt from the prohibition. Artistic and industrial users of gold were permitted to deal in the metal only under a special Treasury license. Legal gold transactions had to be made at the official U.S. government price until 1968, when gold regulations were changed. Since then, licensed dealers have been able to buy and sell gold at market-determined prices.



When the United States ceased selling gold to foreign official holders of dollars at the rate of \$35 an ounce in 1971, it brought the gold exchange standard to an end. The 41-year old legal prohibition on public gold transactions and ownership was not repealed until August 1974. The United States is now one of the many nations, including Japan, West Germany, and France, that do not restrict gold ownership. However, many more countries still maintain some prohibitions against private ownership of gold.



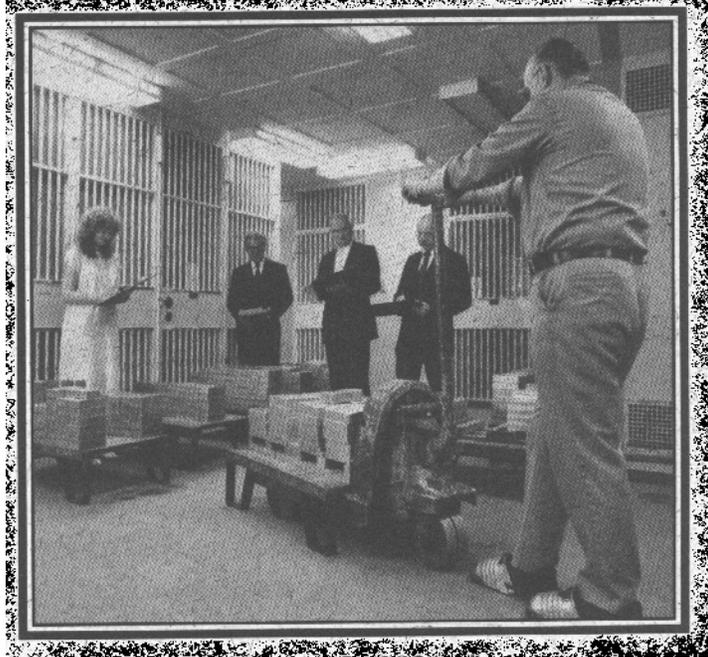
INFLOWS AND OUTFLOWS

Foreign-owned gold officially valued at \$26 million was on deposit with the Bank when the present main vault was opened in September 1924. Holdings rose to about \$458 million by the end of 1931, then fell sharply in the early years of the Great Depression. The economic problems of the United States, a slump in world trade, the lack of confidence in the international monetary system and a desire to provide a psychological boost to their troubled economies prompted many nations to recall their gold. By 1935, foreign gold deposits had fallen to about \$9 million.

The trend of withdrawals was reversed by the threat of war in Europe. It brought a virtual flood of gold to the Bank for safekeeping. More than \$1 billion poured in between 1936 and 1939, when Germany invaded Poland. By the end of the war in 1945, foreign gold reserves stored at the Federal Reserve Bank had risen to a total of over \$4 billion.

There was a slight outflow of gold from the Bank's vault in the two years immediately following World War II. During this period, many nations swapped their gold for the U.S.

dollars needed to rebuild their war-ravaged economies. After that, the economies of other nations recovered and their exports to the United States began to rise. There was a shift in the United States balance of payments toward larger deficits. As nations with trade surpluses with the United States accumulated more dollars than they needed, they exchanged their dollars for gold. The gold coffers of these nations bulged. From 1947 to 1971, the year the United States suspended convertibility of dollars into gold for foreign governments, about \$10 billion more was deposited in the vault, bringing the total value of gold holdings to \$14 billion at the "official" price of \$42.2222. Since 1972, there has been a gradual net withdrawal of gold from the vault. Moreover, gold shipments and transfers have become less and less frequent since nations abandoned the gold standard.



The value of deposits in the vault also has varied over the years because of changes in the official as well as the market price of gold. Today, gold transactions occur at the market price of gold. Prior to 1971, however, gold transactions between nations were made at an official fixed price. The official U.S. government price of gold has changed only four times during the past 200 years. The initial price was established at \$19.75 a troy ounce by the Coinage Act of 1792, signed into law by President Washington. In 1834, the official price was increased to \$20.67 an ounce. The price was raised to \$35 by the Gold Reserve Act of 1934, which was signed into law by President Roosevelt. After remaining unchanged for 38 years, the price was raised arbitrarily twice in 16 months: to \$38 in 1972 and to its current \$42.2222 an ounce in 1973. The market price of gold has climbed so high in recent years that the official price of the precious metal has become irrelevant from a transactions perspective. The United States and other nations are no longer willing to sell the precious metal at its official price. However, the official price of gold is still used by governments for bookkeeping and reporting purposes.

A SHIPMENT ARRIVES

The gold stored in the Bank is in the form of bars resembling construction bricks. When the gold is shipped to the Bank it is stacked on wooden pallets like those used in warehouses. To reach the vault, the bullion-laden pallets must be loaded into one of the bank's "security" elevators and sent down five floors below street level to the vault floor. The elevator's movements are controlled by an operator located in a distant room who is in contact by intercom with the armed guards who are accompanying the shipment.

Once inside the vault, the gold bars become the responsibility of a control group, consisting of representatives of three of the Bank's divisions: auditing, vault services and

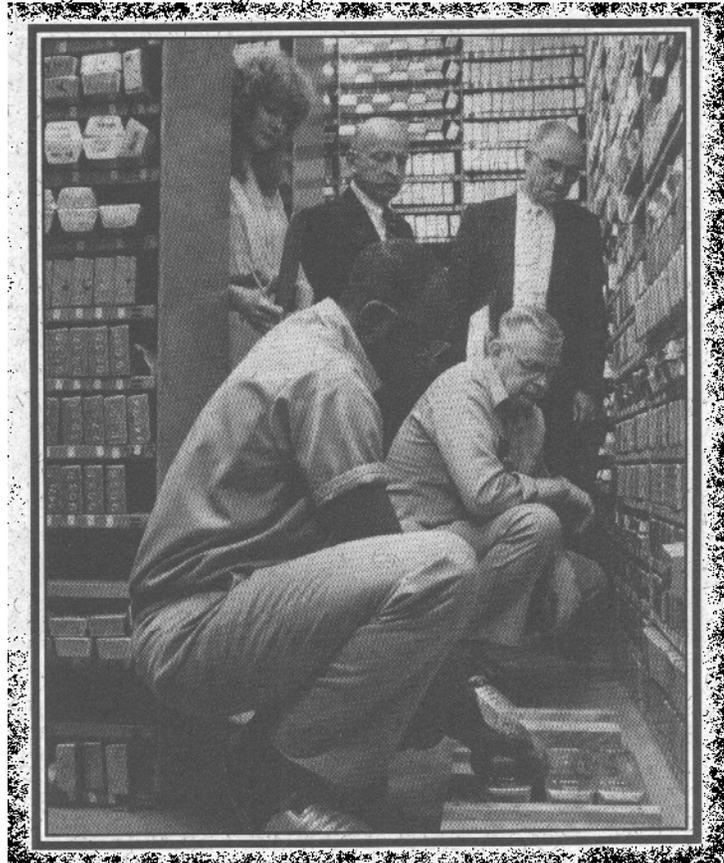
protection. A member of each of the three divisions must be present whenever gold is moved or whenever anyone, even the Bank's president, enters the vault.

All bars brought into the vault are carefully checked and weighed. These steps are critical, since the weight and purity of a bar determine its value and acceptability in international transactions. A power hoist lifts the gold onto an old-fashioned, but very precise, balance scale. It weighs gold to the nearest 1/100 of a troy ounce, equal to one-third the weight of a dollar bill. The vault control group verifies the weight, serial number and the purity measure stamped on each bar against an accompanying manifest. If everything is in order, the gold is moved to one or more of the vault's 122 compartments assigned to depository countries or placed in one of the "library" compartments shared by several countries, where the gold is stored on shelves. The bars are stacked in a compartment one at a time in an overlapping pattern similar to that used to stabilize a brick wall. Each compartment is secured by a padlock, two combination locks and an auditor's seal. Three members of the vault control group, which is responsible for these locks, must be present whenever a compartment is opened or closed.

Although working with gold worth billions of dollars may seem to be a fascinating job, when gold is moved it's just plain hard work. Hydraulic lifts and conveyor belts partially relieve the physical strain, but lifting, swinging and positioning 27-pound bars again and again is an arduous task. Teams of "gold stackers" work in shifts that allow them frequent rest periods. The job also has its hazards. To protect their feet from accidentally dropped bars, the stackers wear lightweight, but strong, magnesium shoe covers.

The Fed does not charge for holding gold, but a nominal handling fee is levied when gold enters, is moved within or is shipped out of the vault. Compartments are identified by number rather than by the names of gold owners. Nations, like individuals, prefer to keep their bank balances private. Only a few Bank employees are allowed to know the identity of gold owners.

The gold in compartment number 86, which faces the vault entrance, is arranged as a display. The compartment contains 5,160 bars valued at about \$87.1 million at the official rate of \$42.2222 and \$825.6 million based on a market price of \$400 an ounce.



Its capacity of about 6,000 bars makes it one of the smaller compartments. The largest compartment contains about 107,000 bars—literally a wall of gold 10 feet high, 10 feet wide and 18 feet deep—valued at about \$1.8 billion at the official rate and \$17.1 billion at a market price of \$400 an ounce.



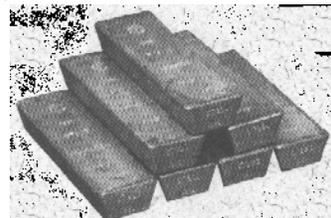
SECURITY IS ESSENTIAL

Storing almost \$126 billion of gold in addition to the billions of dollars in securities, paper currency and coin held at the Bank makes extensive security measures mandatory. An important protective measure is the background investigations required of all bank employees. The continuous supervision of the vault control group also prevents problems from arising by ensuring that proper security procedures are followed.

The gold is secured by the vault's design, which is a masterpiece of protective engineering. The gold vault is actually the bottom floor of a three story bunker of vaults arranged like strongboxes stacked on top of one another. The massive walls surrounding the vault are made of reinforced structural concrete.

There are no doors into the gold vault. Entry is through a narrow 10-foot passageway cut in a delicately balanced 9-foot tall, 90-ton steel cylinder that revolves vertically in a 140-ton steel and concrete frame. The vault is opened and closed by rotating the cylinder 90 degrees so that the passageway is clear or blocked. An airtight and watertight seal is achieved by lowering the slightly tapered cylinder three-eighths of an inch into the frame, similar to pushing a cork down into a bottle. It is secured in place when two levers insert eight large bolts recessed inside the frame into the cylinder. By unlocking a series of time and combination locks, the vault can be opened the next business day. The locks are under "multiple control"—no individual has all of the combinations necessary to open the vault.

The Bank and its vaults are guarded by one of the largest private, uniformed protection forces in the nation. Each guard must qualify periodically with a revolver on the Bank's firing range. Although the minimum requirement is a marksman's score, most qualify as experts. In addition, the Bank's guards must be proficient with other weapons. Additional security is provided by closed-circuit television monitors and by an electronic surveillance system that alerts the central guardroom when a vault door is opened or closed. The alarm system can signal guards to seal all security areas and Bank exits.



The weight of the gold—about 27 pounds per bar—makes it difficult to steal and obviates the need to search vault employees and visitors before they leave the vault. Nor do they have to be checked for specks of gold. Gold is relatively soft, but not so soft that particles will stick to clothing or shoes, or can be scraped from the bars. The Bank's security arrangements are so trusted by depositors that few have ever asked to examine their gold.

An examination of the gold bars stored in the vault can provide an indication of their origin and history. The shape of a bar may indicate whether it was cast in the United States or abroad. Before 1986, bars cast in this country were generally rectangular bricks, 7 inches by 3 5/8 inches long and between 1 5/8 inches and 1 3/4 inches thick. In recent years, however, gold bars cast in the United States and most bars cast abroad have been trapezoidal.

It is sometimes possible to tell by the shape of a bar where it was cast: bars from the Denver Mint have rounded corners while those formed at the New York or San Francisco Assay Offices have sharp corners.

Occasionally, visitors see bars that are smaller than others. These bars, nicknamed "Hershey bars," are formed at the end of the casting process when there is not enough molten gold left in the smelter's crucible to produce a full bar. Since the purity of gold in different pourings varies, any remaining metal cannot be added to other pourings. Instead, it must be cast into a separate bar.

GOLD AT A GLANCE

The seal stamped on each bar indicates the smelter where the gold was refined as well as where and when the bar was cast. Other numbers identify its melt—a group of as many as 24 bars is obtained from a single pouring of molten gold—and its purity. Bars must be at least 99.5 percent pure gold and weigh between 350 and 430 troy ounces to qualify as "good delivery" in most international transactions. Most of the bars in the vault are so-called "fine" bars—containing 99.5 percent pure gold or better. The remaining 0.5 percent or less consists of copper, silver and other impurities that are difficult and expensive to remove.

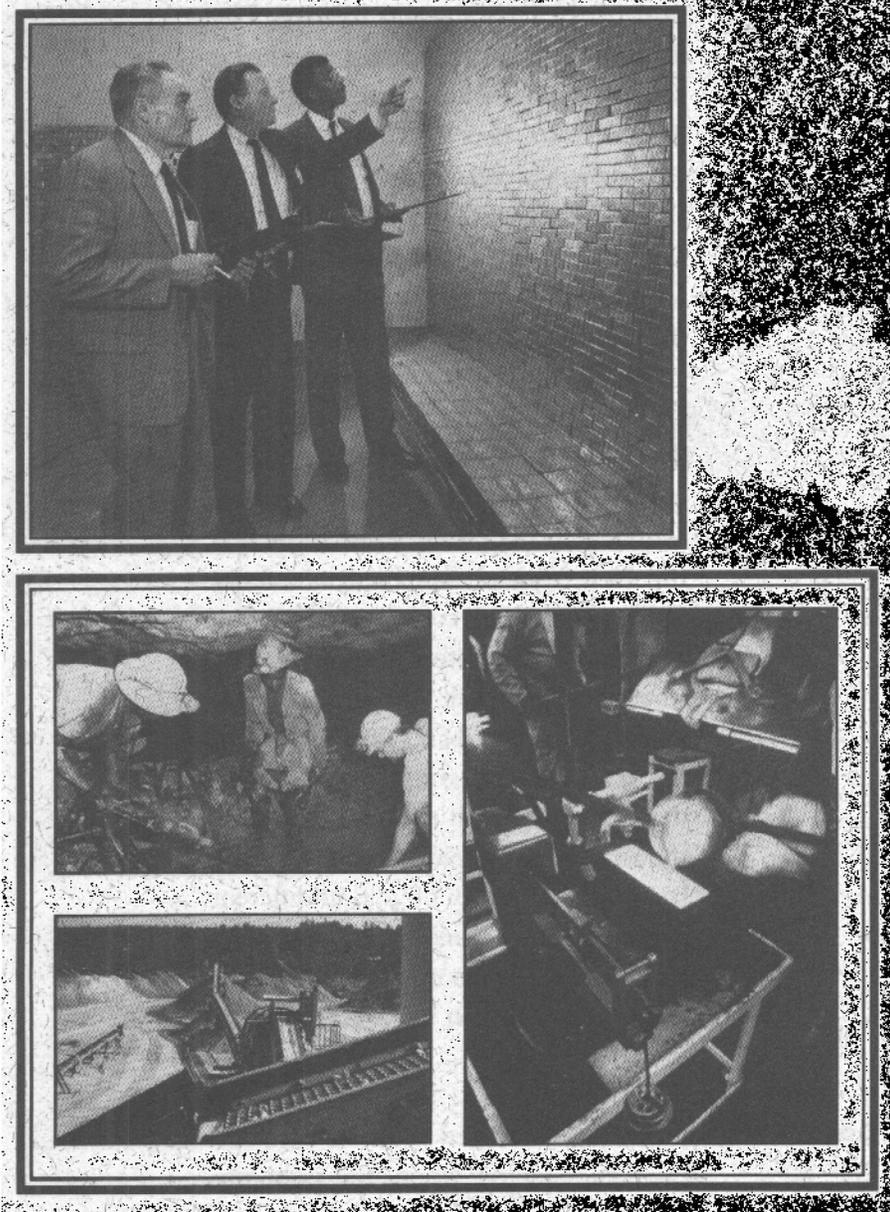
The color of a bar can indicate the type of impurities in the metal and something about the origin of the gold. The butter yellow bars in the vault are nearly 100 percent pure and are usually made of newly mined gold. Reddish bars contain copper and other impurities and generally consist of melted gold coins and jewelry containing alloys. Since 1968, a number of these "coin" bars, dating back to the early 1900s, have been stored in the Bank's vault. Silver and platinum impurities make gold white; iron produces shades of green. One of the rarest forms is black gold, which contains traces of bismuth.

Most of the bars contain gold from four areas of the world. South Africa is the largest producer, supplying about one-half of all newly mined gold. Russia ranks second, accounting for one-fifth of the gold produced each year. Canada and the United States are other important sources of gold. Most of the gold is extracted from rock veins reached by open pit mines or by mine shafts extending thousands of feet underground. A small share of the gold comes from nuggets found on the surface of the earth and from particles washed into the beds of streams and rivers.

Relatively old European bars scarred from years of handling can be found in the vault. These imperfections do not affect the value of a bar, since most scars result from dents rather than chips. Occasionally, the edge of a bar may appear to have been notched. This cut was made by the owner's assayer to sample the purity of the bar's gold. After testing, assay "chips" are added to the gold used to make other bars.

Gold weights, which are calculated in troy ounces, can be equated to weights in avoirdupois ounces or pounds, a measurement system with which we are more familiar. The troy system is used to weigh precious metals and gems and is named after Tries, France, where it originated. The avoirdupois system, used to weigh everything but

precious metals, gems and drugs, takes its name from the French phrase "avoir du pois," meaning goods of weight. Despite the origin of their names, the two measurement systems are British. They are based on the same unit of measure, the grain, which can be used to convert weight from one system to the other. The troy ounce contains 480 grains, while 437.5 grains make up the avoirdupois ounce. A standard 400-troy ounce gold bar weighs 438.8 avoirdupois ounces, or 27.4 avoirdupois pounds.



MONETARY GOLD

It is estimated that the gold in the vault represents a significant portion of the gold that has been mined throughout history. Most of the gold in existence today was mined during the twentieth century, much of it since the end of World War II. The International Monetary Fund reported that world gold reserves totaled about 1,145 million troy ounces at the end of 1990. The United States owned 23 percent of this monetary gold, an amount about equal to the combined holdings of West Germany, France and Switzerland.



The bullion in the vault belonging to the U.S. government represents a very small fraction of the nation's gold reserves. The government stores U.S. gold in other vaults. More than half of it is held in depositories at Fort Knox, Kentucky and West Point, New York. Most of the remainder is at the Denver and Philadelphia Mints and the San Francisco Assay Office. Totalling about 262 million ounces at the end of 1990, the gold reserves of the United States are officially valued at about \$11 billion. If they were valued at the market price of gold, say \$400 per ounce, the government's gold reserves would be worth \$105 billion, equivalent to \$420 for each U.S. resident. It also means that every time the price of gold fluctuates by just one cent, the market value of the Treasury's reserves rises or falls by about \$2.6 million.

INTRIGUING PROVENANCE

Suppositions about the origin of the gold in the vault must be conjecture. However, since the metal is virtually indestructible, much of the gold used for monetary and decorative purposes over the centuries remains in existence today. It is possible that some of it could have been used in smelting the gold used to form the older bars in the vault. Some of the gold could have come from ancient coins, for gold has been used as a currency since the sixth century B.C.

The search for gold over time has had a great influence on world events. Some of the vault's gold could have a long and fascinating history. Gold has been used for decorative purposes since 3,000 B.C. and some of it could have been melted down into bullion. The gold could have been found in the tombs of the pharaohs and captured from the Greeks by the Romans. Some of the gold could have been brought to Queen Isabella by Columbus. It could have been looted from the Aztecs and Incas by the Conquistadores as well as captured from Spanish treasure ships by Sir Francis Drake.



A portion of the gold in the vault could have been panned near Sutter's Mill in California or discovered during the Yukon gold rush. Some of the bullion deposits could have been spirited away from Hitler's advancing armies across the Atlantic Ocean by U-boat menaced Allied convoys. However, most of the gold has a more recent and far less interesting background. Nonetheless, whatever its origin, the gold stored in the vault of the Federal Reserve Bank of New York is an impressive sight.

THE FEDERAL RESERVE BANK OF NEW YORK

THE FEDERAL RESERVE BANK OF NEW YORK, TOGETHER WITH ELEVEN OTHER RESERVE BANKS AND THE BOARD OF GOVERNORS, COMPRISE THE FEDERAL RESERVE SYSTEM. AS THE CENTRAL BANK OF THE UNITED STATES, THE FEDERAL RESERVE SYSTEM IS RESPONSIBLE FOR CONDUCTING MONETARY POLICY AND REGULATING BANKS. THE GOVERNING BODY OF THE SYSTEM, THE BOARD OF GOVERNORS IN WASHINGTON, D.C., CONSISTS OF SEVEN GOVERNORS NOMINATED BY THE PRESIDENT AND CONFIRMED BY THE SENATE. ONE OF THE GOVERNORS IS APPOINTED BY THE PRESIDENT TO BE CHAIRMAN, THE HIGHEST POST IN THE FEDERAL RESERVE. THE CHAIRMAN OF THE BOARD OF GOVERNORS IS ALSO CHAIRMAN OF THE FEDERAL OPEN MARKET COMMITTEE (FOMC), THE GROUP OF FEDERAL RESERVE OFFICIALS WHO DETERMINES MONETARY POLICY.

THE FEDERAL RESERVE BANK OF NEW YORK SERVES THE SECOND OF TWELVE FEDERAL RESERVE DISTRICTS. IT ENCOMPASSES NEW YORK STATE, THE TWELVE NORTHERN AND CENTRAL COUNTIES OF NEW JERSEY AND FAIRFIELD COUNTY, CONNECTICUT. THE NEW YORK FED AND OTHER RESERVE BANKS SUPERVISE AND REGULATE STATE CHARTERED BANKS THAT ARE MEMBERS OF THE FEDERAL RESERVE SYSTEM AND BANK HOLDING COMPANIES IN THEIR DISTRICTS. EACH RESERVE BANK PROVIDES SERVICES TO DEPOSITORY INSTITUTIONS IN ITS DISTRICTS AND FUNCTIONS AS A FISCAL AGENT OF THE U.S. GOVERNMENT.

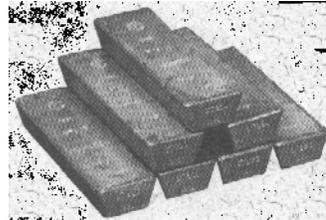
THE FEDERAL RESERVE BANK OF NEW YORK HAS SEVERAL UNIQUE RESPONSIBILITIES WITHIN THE FEDERAL RESERVE SYSTEM. BESIDES CONDUCTING OPEN MARKET OPERATIONS FOR THE FOMC, THE BANK PERFORMS IMPORTANT INTERNATIONAL CENTRAL BANKING FUNCTIONS. ONE IS TO ENGAGE IN FOREIGN EXCHANGE INTERVENTION ON BEHALF OF THE U.S. GOVERNMENT. THE OTHER IS TO MAINTAIN RELATIONS WITH AND PROVIDE FINANCIAL SERVICES FOR FOREIGN CENTRAL BANKS. IN THIS ROLE THE FED SERVES AS CUSTODIAN FOR THE GOLD RESERVES OF FOREIGN OFFICIAL AND INTERNATIONAL ACCOUNTS. IT ALSO INVESTS THE DOLLAR RESERVES OF THOSE FOREIGN CUSTOMERS IN MARKETABLE U.S. GOVERNMENT SECURITIES. AS OF EARLY 1991, IT HELD IN CUSTODY APPROXIMATELY \$250 BILLION OF SUCH SECURITIES.

Gold! Gold! Gold! Gold! Bright and yellow, hard and cold. THOMAS HOOD

Gold is a beautiful and noble metal. What is barbarous, when it occurs, is man's enslavement to gold for monetary purposes. WILLIAM MCCHESENEY MARTIN

There can be no other criterion, no other standard than gold. Yes, gold, which never changes, which can be shaped into ingots, bars, coins, which has no nationality, and which is eternally and universally accepted as the unalterable fiduciary value par excellence. CHARLES DE GAULLE

The lust of gold succeeds the rage of conquest; The lust of gold, unfeeling and remorseless! The last corruption of degenerate man. SAMUEL JOHNSON



Get Gold, humanely if possible, but at all hazards get gold. FERDINAND V

All that glitters is not gold. WILLIAM SHAKESPEARE

Gold and power, the chief causes of wars. TACITUS

Gold is almighty. SCHILLER

I hate gold; it has persuaded many men in many matters to do evil. PLAUTUS

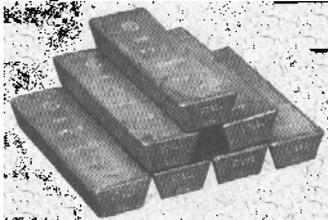
Gold is irresistible; everything depends on gold. GOETHE

That for which all virtue now is sold, And almost every vice-almighty gold. BEN JOHNSON

That is gold which is worth gold. GEORGE HERBERT

You shall not press down upon the brow of labor this crown of thorns, you shall not crucify mankind upon a cross of gold! WILLIAM JENNINGS BRYAN

When we are victorious on a world scale I think we shall use gold for the purpose of building lavatories in the streets of some of the largest cities in the world. VLADIMIR LENIN



Gold is a barbarous relic... Never in history was there a method devised of such efficacy for setting each country's advantage at variance with its neighbours' as the international gold...standard. For it made domestic prosperity directly dependent on a competitive pursuit of markets and a competitive appetite for the precious metals... JOHN MAYNARD KEYNES

Gold gives to the ugliest thing a certain charming air, For that without it were else a miserable affair. MOLIÈRE

Gold, like every other commodity, is always somewhere or another to be got for its value by those who have that value to give for it. ADAM SMITH

Gold defiles with frequent touch; There's nothing that fouls the hand so much. JOHNATHAN SWIFT

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