THE FEDERAL RESERVE BANK OF NEW YORK

THE KEY TO THE

GOLD VAULT

Indeed, 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

INTRODUCTION

As one of the metallic elements in the earth's crust, gold is as old as the planet itself and is found and extracted on all continents. It is referred to by many as the "king of metals" and always has been assigned a role far beyond its value as a commodity.

Gold has been coveted by the great and wealthy — from pharaohs to modern-day heads of state — as a means of ostentation. It has been desired by the common folk for its beauty of appearance and beloved by goldsmiths for its splendid working qualities. Gold has provided material for great artists, novelists, and poets. And, over the years, it has been used to decorate cathedrals and palaces, to honor Olympic medalists and movie stars, and to celebrate 50th wedding anniversaries. Exemplifying supreme appeal and arousing human desire, this metal, above all others, has been used for centuries as a medium of exchange, a measure of value, and a store of wealth.

The gold you see in the vault of the Federal Reserve Bank of New York attracts more than 20,000 visitors a year. It is the world's largest accumulation of gold and belongs to approximately 60 foreign central banks and international monetary organizations. Only a very small portion of this gold belongs to the U.S. Government. The Federal Reserve Bank does not own the precious metal but serves as guardian for the nations and international organizations that choose to leave their monetary gold reserves in custody with it.

This publication outlines the history of gold and explores its financial significance and the unique role of the Federal Reserve Bank of New York in storing and safeguarding the exquisite metal.

LE GRAND MYSTIQUE

One of the oldest civilizations known to man, the Sumerians of Mesopotamia, who lived in what is modern-day Iran and Iraq, first used gold as sacred, ornamental, and decorative instruments in the fifth millennium B.C. Around the same period, the early Egyptians — the richest gold-producing civilization of the ancient world — began the art of gold refining. Like the Sumerians, the Egyptians used gold primarily for personal adornment, rather than for monetary purposes, although the kings of the fourth to sixth dynasties (c. 2700 - 2270 B.C.) did issue some gold coins.

The first large-scale, private issuance of pure gold coins was under King Croesus (560-546 B.C.), the ruler of ancient Lydia, modern-day western Turkey. Stamped with his royal emblem of the facing heads of a lion and a bull, these first known coins eventually became the standard of exchange for worldwide trade and commerce. Following the collapse of the Lydian Empire in 546 B.C., the Persians gained control of Asia's richest gold

sources, which gave it far greater power in the world. The standard gold coin of the Persian Empire was the daric, named after Darius the Great (521 - 486 B.C.). Alexander the Great of Macedonia (336 B.C. - 323 B.C.) subsequently established a rival coinage system that served as one of the important factors in his conquest of Persia and the movement of gold into Europe. Later, Emperor Augustus (31 B.C. - A.D. 14) was the first Roman to establish a golden currency, known as the aureus, which helped spur the dynamic expansion of the Roman economy.

By the time the Roman Empire collapsed in the 5th century, gold had been used as both a tool of trade and a means to accumulate wealth for many hundreds of years. For medieval Christianity, though, gold remained a mystical symbol of eternity and light, as represented in such objects as crowns, halos, and altars.

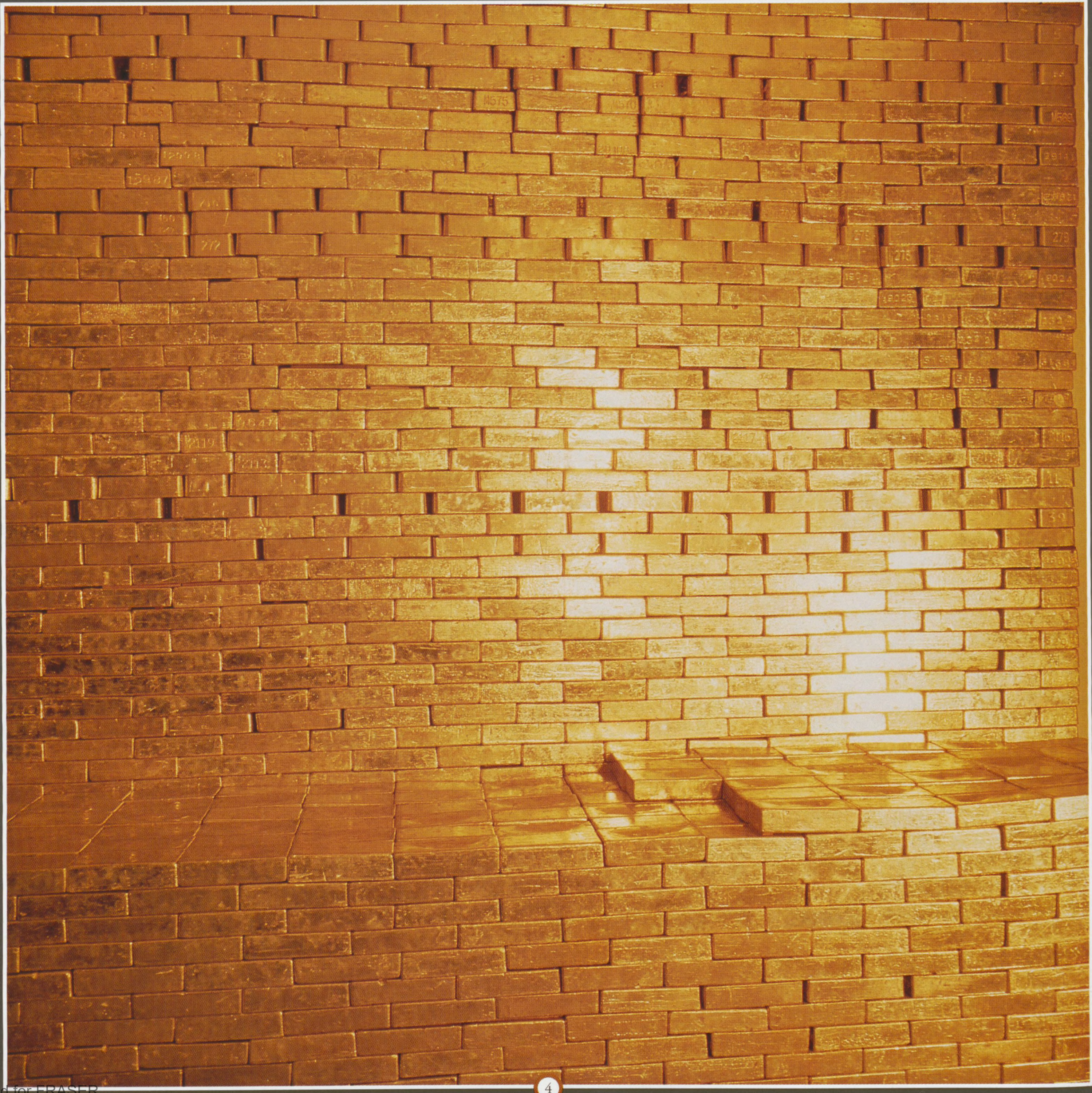
During the 16th century, as the New World was being explored, gold currencies became prevalent in Europe. After Christopher Columbus landed in the Americas in 1492, other expeditions set sail to uncover the gold treasures rumored to lie in these distant lands. King Ferdinand V of Spain issued the order, "Get gold, humanely if you can, but at all hazards get gold."

Early Egyptians, the richest gold producers of the ancient world, began the art of refining around the fifth millennium B.C.

As history has shown, humanity was of secondary concern. By 1521, Spain had overthrown the Aztecs, and Mexico, with its vast stores of gold, became part of the Spanish Empire. Soon thereafter, Spanish explorers conquered the gold-rich Inca civilization of Peru and destroyed its golden sun temples, which were covered in ornaments of dazzling beauty.

Although they acquired immense wealth, the Spaniards continued their quest. The myth that gold was created by the striking of the sun's powerful rays against mud led the Spanish Conquistadors to search in areas where wide tropical rivers flowed. Soon, rumors began to circulate of a fabulous city along the equator — El Dorado — where the houses and lake were made of solid gold and the people wore fabrics of gold.

As these stories spread, other Europeans began to finance expeditions in search of the great source of gold proclaimed to lie somewhere in South America. Sir Walter Raleigh, the British explorer, obtained a special grant from Queen Elizabeth I in the late 1500s that allowed him to search for the mysterious South American city. Raleigh, after returning empty-handed, wrote a book, *The Discoverie of the Large, Rich and Beautiful Empire of Guiana,* detailing everything "known" about the great city. Although no one ever discovered such a city, belief in the legend kept searches going for centuries.



The great era of gold production that followed the discovery of the New World continued throughout the 17th, 18th, and 19th centuries. "Gold rushes" occurred in the 19th century when people, in search of instant fortune, flocked to California (1848), Australia (1851), South Africa (mid-1850s to the late 1880s), and the Klondike area of Canada along the Yukon River (1896). Today, according to the Gold Institute in Washington, D.C., South Africa is the largest supplier of gold, followed by the United States, Australia, the Commonwealth of Independent States (CIS), and Canada.

Although the role of gold in the world economy has declined over the last century, people are still intrigued by the power, mystery, and brilliance associated with the metal. Today, gold is no longer commonly used as money but continues to serve as an important store of value. When people are worried about political instability, war, or inflation, they often put their savings into gold.

THE GOLD STANDARD

The gold bullion in the Federal Reserve Bank of New York's vault is part of the monetary reserves of foreign governments, central banks, and official international organizations around the world. It is largely a relic of an era when the gold standard and gold exchange standard were used to establish the relative values of national currencies, and gold itself was used to meet international payments.

Bullion at the Federal Reserve Bank of New York — the world's largest repository of gold — belongs to some 60 foreign central banks and international monetary organizations.

A currency on an unrestricted gold standard could be converted into gold at a fixed price — regardless of the amount involved or the nationality of the currency's holder. Great Britain, through a series of laws passed between 1816 and 1821, became the first modern nation to link its money to gold in this way. Although the United States defined the value of the dollar in terms of gold and silver even earlier (the official price of gold was established at $19.75 a troy ounce by the Coinage Act of 1792), the government didn't adopt an exclusive gold standard until 1900. By 1905, most of the world's major trading countries had adopted the gold standard as well.

Few European nations could maintain their gold standards during World War I, however, as shipments of the metal frequently were embargoed. And when the standards were restored in the late 1920s, many countries adopted a revised version called the gold exchange standard. This revision appealed to countries that wanted some sort of gold standard but also wanted to halt the drain of gold reserves. The gold exchange standard did just that by permitting the use of "reserve currencies" instead of gold in exchange for their currencies.

At first, the United States and England — countries with substantial gold reserves — became issuers of the world's "reserve currencies." But in 1931, after maintaining gold parity throughout the stress of the decade following World War I, England suspended gold payments. This set off a wave of similar suspensions so that, by the first half of 1932, more than 40 nations had deserted either the gold standard or the gold exchange standard. Then, in 1933, President Roosevelt imposed a ban on U.S. citizens' buying, selling, or owning gold. While the U.S. Government continued to sell gold to foreign central banks and government institutions, the ban prevented hoarders from profiting after Congress devalued the dollar (in terms of gold) in January 1934. This action raised the official price of gold by more than 65 percent (from $20.67 to $35 per troy ounce). Gold coins and certificates considered collectors' items were exempt from the prohibition, and artistic and industrial users of gold were permitted to deal in the metal under a special Treasury license.

Legal gold transactions had to be made at the official U.S. Government price until 1968, when gold regulations again were changed to prevent runs on U.S. Government gold reserves. Under the new system, the world's currencies would still be valued in terms of the dollar, but the dollar would no longer be related to gold reserves. Also, since 1968, licensed dealers have been able to buy and sell gold at market-determined prices.

When the United States stopped 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. In August 1974, President Ford repealed the prohibition on the public's owning gold or engaging in gold transactions. Today, no country bans private ownership of gold.

GUARDIAN OF THE GOLD

The gold stored at the Federal Reserve Bank of New York is secured in a most unusual vault. It rests on the bedrock of Manhattan Island — one of the few foundations considered adequate to support the weight of the vault, its door, and the gold inside — 80 feet below street level and 50 feet below sea level.

In the middle of 1997, the Fed's vault contained roughly 269 million troy ounces of gold (1 troy oz. is 1.1 times as heavy as the avoirdupois ounce, with which we are more familiar), representing 25 to 30 percent of the world's official monetary gold reserves. At the time, the vault gold's value was $11 billion at the official U.S. Government price of $42.2222 per troy ounce, or about $86 billion at the market price of $319 an ounce. At the current official U.S. Government price, one of the vault's gold bars (approximately 27.4 pounds) is valued at about $17,000. At a $319 market price, the same bar is worth about $127,000.

Gold at the Fed rests 80 feet below street level in Manhattan on one of the few foundations capable of supporting the weight of both the vault and its contents.

Foreign governments and official international organizations store their gold at the Federal Reserve Bank of New York because of their confidence in its safety, the convenient services the Bank offers, and its location in one of the world's leading financial capitals.

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

Convenience comes from the fact that the Federal Reserve Bank of New York, in addition to handling foreign financial transactions for the U.S. Department of the Treasury and the Federal Reserve System, executes many other financial transactions in the United States for foreign central banks.

The attractiveness of the Bank's geographic location is that gold deposited in the trade and financial capital of the world's largest economy enables countries to engage in transactions of all sizes easily, quickly, and inexpensively.

Gold is stored at the New York Fed because of confidence in its safety, the convenient services the Bank offers, and its location in one of the world's leading financial capitals.

Foreign Gold at the Fed

Foreign-owned gold valued at $26 million (at the official price at that time of $20.67 a troy ounce) was on deposit with the Federal Reserve Bank of New York when the main vault was opened in September 1924. Holdings rose to about $458 million by the end of 1931, then fell sharply during 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 boost to their troubled economies prompted many nations to recall their gold. By 1935, foreign gold deposits had fallen to about $9 million, even though the official price of gold had been raised to $35 a troy ounce by the Gold Reserve Act of 1934.

The threat of war in Europe reversed the trend of Depression-era withdrawals and brought a virtual flood of gold to the New York Fed 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 more than $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 foreign nations recovered, and their exports to the United States began to rise. As a result, there was a shift in the U. S. balance of payments toward larger deficits.

As nations with trade surpluses with the United States accumulated more dollars than they needed, they often exchanged their dollars for gold. The gold coffers of these nations in the New York Fed's basement 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 stored at the New York Fed to $14 billion at the "official" price of $42.2222. Since 1972, there has been a gradual, but steady, net withdrawal of gold from the vault.

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, all gold transactions occur at the market price of gold, but prior to 1971 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. Since the passage of the Gold Reserve Act of 1934, which raised the official price of gold to $35 a troy ounce, the price has been raised twice: to $38 in 1972, and in 1973, to its current price of $42.2222 an ounce.

Because of the large disparity between the official price and the market price of gold, the official price has become irrelevant from a transactions perspective. Today, no nation is willing to sell gold at the official price, which is used by governments only for bookkeeping and reporting purposes.

THE BANK STORES GOLD...

The Bank stores gold in the form of bars that resemble construction bricks and stacks them 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 elevators and sent down five floors below street level to the vault floor. The elevator's movements are controlled by an operator who is in a distant room and communicates by intercom with the armed guards accompanying the shipment.

Once inside the vault, the gold bars become the responsibility of a control group consisting of representatives of three Bank divisions: Auditing, Vault Services, and Protection. A member of each division must be present whenever gold is moved or whenever anyone enters the vault.

All bars brought into the vault are inspected and weighed. These steps are critical, because the weight and purity of a bar determine its value and acceptability

Once inside the vault, gold bars become the responsibility of a control group consisting of representatives of three Bank divisions: Auditing, Vault Services, and Protection.

in international transactions. A modern electronic balance scale weighs each bar to the nearest 1/1000 of a troy ounce. The vault control group verifies the weight, serial number, and purity measure stamped on each bar against an accompanying manifest.

If everything is in order, the gold is either moved to one or more of the vault's 122 compartments assigned to depositing countries and official international organizations or placed on shelves in one of the "library" compartments shared by several countries. The bars are stacked 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.

Although working with gold worth billions of dollars is a fascinating job, moving gold is arduous work. Hydraulic lifts and conveyor belts partially relieve the physical strain, but lifting, swinging, and positioning 27-pound bars again and again is a laborious task. Teams of "gold stackers" work in shifts that allow them sufficient rest periods.

The job also has its hazards. To protect their feet from dropped bars, the stackers wear strong, yet lightweight, magnesium shoe covers. The Fed does not charge foreign countries for holding gold, but it does levy a handling fee when gold enters, is moved within, or is shipped out of the vault.

Compartments are identified by number, rather than by the countries that own the gold within them, in order to keep each country's gold holdings private. Only a few Bank employees know the identity of the gold owners.

From Hershey Bars to Butter Bars

An examination of the gold bars stored in the vault can tell a lot about 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 generally were rectangular bricks: 7 inches long, 3 5/8 inches wide, and between 1 5/8 inches and 1 3/4 inches thick. In recent years, however, gold bars cast in the United States, as well as most bars cast overseas, have been trapezoidal.

A bar's shape also can tell where in the United States it was cast: bars from the Denver Mint have rounded corners, while those formed at the New York or San Francisco Assay Offices have square edges.

Occasionally, visitors see a few bars that are much 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. Because the purity of gold in different pourings varies, any remaining metal is not added to other pourings, but is cast into a separate, smaller bar.

Hydraulic lifts and conveyor belts relieve the strain of moving gold, but positioning 27-pound bars has its hazards. Stackers wear strong, yet lightweight, magnesium shoe covers to protect their feet from dropped bars.


GOLD

The seal stamped on each bar identifies where the gold was refined, as well as where the bar was cast. Other numbers identify its melt (the molten gold from which a bar is made) and its purity. None of the bars is 100 percent pure gold. Each has 0.5 percent or less of copper, silver, and other impurities that are difficult and expensive to remove. To qualify as "good delivery" in most international transactions, standard bars must be at least 99.5 percent pure gold and weigh between 350 and 430 troy ounces. Bars that meet that standard are called "fine" bars.

All bars are gold in color, naturally, but some have tinges that can indicate the type of impurities, however modest, in the metal. Traces of silver and platinum give the gold a whitish shade, copper is most often found in reddish bars, and iron produces a greenish hue. One of the rarest forms is black gold, which contains traces of bismuth. The butter-yellow bars in the vault usually are made of newly mined gold.

Some relatively old bars, originally cast in Europe and scarred from years of handling, can be found in the vault. The imperfections do not affect the value of a bar, as most scars are dents, rather than chips. Occasionally, the edge of a bar may have been notched, with an "A" stamped into it. The cut was made by the owner's assayer to sample the purity of the bar's gold.

Gold weights, which are calculated in troy ounces, can be converted to weights in avoirdupois ounces or pounds, with which we are all familiar. The names of both weight systems have French derivations. The troy system is used to weigh gems and precious metals and is named after Troyes, France. The avoirdupois system, used to weigh just about everything but drugs, gems, and precious metals, takes its name from the French phrase "avoir du pois," meaning goods of weight. It is 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; the avoirdupois ounce is 437.5 grains. A standard 400-troy ounce gold bar weighs 438.8 avoirdupois ounces, or 27.4 avoirdupois pounds.

Power and Worth

It is estimated that the gold in the vault represents a significant portion of all the monetary gold that has ever been mined. 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 900 million troy ounces in early 1997. The United States owned approximately 29 percent of this monetary gold.

Numbers identify the melt and purity of each gold bar.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The bullion in the New York Fed's vault belonging to the U.S. Government represents a very small fraction of the U.S. gold reserves. A majority of these reserves are held in depositories of the Treasury Department 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. Totaling about 262 million troy ounces in 1997, the gold reserves of the United States officially are valued at about $11 billion. Valued at the approximate market price of gold, $319 per ounce, the U.S. Government's gold reserves are worth $84 billion, or $340 for each U.S. resident.

AN INDISPENSABLE SECURITY SYSTEM

Storing almost $86 billion of gold makes extensive security measures mandatory at the New York Fed. An important measure is the background investigation required of all Bank employees. Continuous supervision by the vault control group also prevents problems from arising by ensuring that proper security procedures are followed.

The Bank and its vaults are guarded by the Bank's own uniformed protection force. Periodically, each guard must qualify 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.

Entry into the gold vault is through a ten-foot passageway cut in a 90-ton steel cylinder that revolves vertically in a 140-ton, steel-and-concrete frame.

Security also 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, which can be closed within seconds.

The gold also is secured by the vault's design, which is a masterpiece of protective engineering. The 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 a steel-reinforced structural concrete.

There are no doors into the gold vault. Entry is through a narrow ten-foot passageway cut in a delicately balanced, nine-feet-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. An airtight and watertight seal is achieved by lowering the slightly tapered cylinder three-eighths of an inch into the frame, which is similar to pushing a cork down into a bottle. The cylinder is secured in place when two levers insert large bolts, four recessed in each side of the frame, into the cylinder. By unlocking a series of time and combination locks, Bank personnel can open the vault the next business day. The locks are under "multiple control" — no one individual has all the combinations necessary to open the vault.

The weight of the gold — just over 27 pounds per bar — makes it difficult to lift or carry 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.

A PHENOMENAL ASSET

For centuries, gold had an enormous influence on world events. Much of the original gold used for monetary and aesthetic purposes is still in existence today. Regardless of its past, gold often exemplifies well-being, excellence, and wealth. And because of its widespread acceptability, it also functions as a medium of exchange, particularly in areas where currencies are distrusted. Once referred to by John Maynard Keynes as a "barbarous relic" and by Johann Christoph Friedrich von Schiller as "almighty," this precious metal has aroused great passion. It undoubtedly will continue to do so long into the future.

Referred to as both "almighty" and a "barbarous relic," gold has aroused great passion… and undoubtedly will continue to do so.

ABOUT THE FEDERAL RESERVE BANK OF NEW YORK

The Federal Reserve Bank of New York, 11 other Reserve Banks, and the Board of Governors in Washington, D.C., make up the Federal Reserve System, the central bank of the United States. The Board of Governors, which serves as the System's governing body, 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 also is chairman of the Federal Open Market Committee (FOMC), the group of Federal Reserve officials who determine monetary policy.

The Federal Reserve Bank of New York serves the Second Federal Reserve District (each of the 12 Reserve Banks serves a geographic District in the United States). The Second District encompasses New York State, the 12 northern counties of New Jersey, and Fairfield County, Connecticut, as well as Puerto Rico and the Virgin Islands. The New York Fed and the other Reserve Banks supervise and regulate state-chartered banks that are members of the Federal Reserve System, and all bank holding companies and foreign bank branches and agencies based in their Districts. Each Reserve Bank provides services to depository institutions in its District 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 (the buying and selling of U.S. Government securities in order to influence bank reserves and the availability of credit in the economy) to implement monetary policy at the direction of the FOMC, the Bank performs important international central banking functions. For example, the New York Fed engages in foreign exchange intervention on behalf of the U.S. Treasury and the Federal Reserve System. It also maintains relations with, and provides financial services for, foreign central banks. It is in conjunction with this role that the Fed serves as custodian for the gold reserves of foreign official and international accounts. Additionally, it invests the dollar reserves of those foreign customers in marketable U.S. Treasury securities. As of mid-1997, it held in custody over $630 billion of such securities.

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