

MONEY

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In 1850 I was in San Francisco and by chance was on Clay street where the city was selling 50-vara water lots in the neighborhood of Sansome, Battery and Front streets, at auction, \$25 for inside lot, and \$30 for corner lots. I stood there with my hands in my pockets, and gold dust and gold coin on my person that was a burden to me and bought not a single lot. There were many others who were in the same fix that I was. You may say, "What a lot of fools," and I would say, "Yes." Here is another little joke: Sometime before this I made a deposit of a sack of gold dust with Adams & Co.'s Express in San Francisco. When the time came for me to leave the city, I went into the office to draw my sack of dust. The clerk brought it forward at once and I said, "How much for the deposit?" He said, "Five dollars." Then I said, "You will have to take it out of the sack as I have no coin." He said, "Are you going to sell it?" "Yes," I said. "Well," said he, "You can sell it at the counter on the other side, and pay that clerk." "All right," said I, and sold my dust. It amounted to \$425. He counted out the \$25 in small change, and slipped it out onto the counter. I let it lay there until he had counted out the rest.

At this time the \$50 slugs were in circulation. He counted out the \$400 in a pile and took hold of the bottom one and set the pile over to my side of the counter, as much as to say, "There is your money." I said to him "There is five dollars coming to you for the deposit of the dust." He picked the five dollars out of the change on the counter. I picked up the balance of the change and put it into my pocket. I also picked up the pile of slugs by the bottom one in the same way that he handed them to me and dropped them into an outside pocket of my coat without counting them, and started for the four o'clock boat for Stockton. On my way to the wharf I thought that pile of slugs looked large and I took them out and counted them. I found that I had twelve instead of eight. I turned around and went back to the office, to the same counter and clerk, and said to him, "Do you rectify mistakes here?" He said, "Not after a man leaves the office." I said, "All right," and left the office and made the Stockton boat all right. But there were no insane asylums there at that time.

-California 1849-1913 or The Rambling Sketches and Experiences of Sixty-four Years' Residence in that State, By L. H. Woolley Member of the Society of California Pioneers and of the Vigilance Committee of 1856

In my local supermarket, there is a machine that accepts unsorted coins and dispenses banknotes in exchange. The advertising on the machine exclaims "Get cash for your coins!"

To a time traveler from 1850, this would make no sense.

Coins made of a valuable metal were the only form of money in the Western World during the first half of the 19th century. "Cash" and "money" were just other words for "coins". Trade tokens of cardboard, wood, base metals or copper were made by merchants for use in change, much like transit tokens or tax tokens were made in the 20th century, but they were never confused with cash.

What was Money Worth?

\$0.03	First Class Stamp, 1851
\$0.09	One yard cheap cloth
\$0.65	Railroad labor's daily wage, New York
\$0.75-6	Ready-made pantaloons
\$1	Day's wages for a working man, United States 1850
\$1	One Egg, Sacramento 1849
\$1	Dinner at hotel in mining area
\$1	Bed in dormitory-hotel for one night
\$2	One sheet paper, Sacramento 1852
\$2	Plaid dress; 1 yard merino
\$5	Postage on pony express, ½ ounce of mail
\$9	One month's wages for teaching school
\$1-4	One week's wages for a cotton mill female worker
\$1-5	Steamer passage, Sacramento to San Francisco
\$1-15	Ready-made men's coat
\$3-10	Lady's Hat
\$4-8	Average day's production of gold, one miner's share
\$8-10	Lady's parasol
\$12-14	One ounce gold dust
\$22.50	Broche shawl, New York, 1846
\$25	Colt 1951 Navy Revolver, in New York
\$25	Lot in San Francisco
\$40	English concertina, in London
\$200	Colt 1951 Navy Revolver, in Sacramento 1851
\$30,000	Crocker mansion, purchase price 1868

It is difficult to translate values from one time period to another because the changes in technology and culture alter the basis of comparison. For example, a sheet of paper that cost \$2 in 1850 Sacramento costs \$0.02 in 2004 (a factor of 100:1), but 8 hours at minimum wage was \$1 on 1850 and is \$50 in 2004 (a factor of 50:1). That \$25 revolver is now \$250 (a factor of 10:1). The ounce of gold that was worth \$16 then is now worth \$400 (a factor of 25:1) To make price comparisons, it's probably reasonable to multiply the 1850's price by 25 to 50 to get 21st century equivalents.

What Money was Used?

The old term for paper money "banknotes" tells the origin of paper money: it was an IOU from a bank that had received cash on deposit. Banknotes in the early 19th century always traded at discount and often became worthless when the issuing bank went out of business. The California Constitution of 1850 specifically forbids the issuing banknotes; Haywood's 1853 *Gazetteer of the United States* notes "the circulation of paper as money is prohibited."

At the time of the Gold Rush the US was only beginning to recover from a 30 year coin shortage, caused by changes in the value of gold vs silver and the fluctuations in the metal

markets in Europe.¹ Most American silver was melted and sent to Europe at advantageous rates; this left little cash circulating. No silver dollars had even been produced between 1804 and 1840.

Outside of the cities, cash was seldom used. Most payment was done by barter. Until the Civil War, the most common coins in circulation, both on the West Coast and in the States were the Mexican silver coins, denominated in Reales. The 8 Reales coin had the same size and composition as the American Dollar and traded at parity with it. Thus, the 1 Real coin (12 ½ cents), known as a schilling in New England, a ninepence² in Maine, and as a Bit in the South traded at two for a quarter dollar. The half-Real (6 ¼ cents) was also known as a Medio or as a Picayune. French francs were also popular and traded at a premium in gold rush California.

“Coin was very scarce, what there was being nearly all absorbed by the gamblers, who required it for convenience in carrying on their business. Ordinary payments were made in gold dust, every store being provided with a pair of gold scales, in which the miner weighed out sufficient dust from his buckskin purse to pay for his purchases.

In general trading, gold dust was taken at sixteen dollars the ounce; but in the towns and villages, at the agencies of the various San Francisco bankers and express companies, it was bought at higher price, according to the quality of the dust, and as it was more or less in demand for remittance to New York.

...On the discovery of gold in California, the express houses of New York immediately established agencies in San Francisco, and at once became largely engaged in transmitting gold dust to the mint in Philadelphia... They had agencies also in every little town in the mines... receiving deposits from miners and others, and selling drafts on the Atlantic States....

The want of coin was equally felt in San Francisco, and coins of all countries were taken into circulation to make up the deficiency. As yet a mint had not been granted to California, but there was a Government Assay Office, which issued a large octagonal gold piece of the value of fifty dollars—a roughly executed coin, about twice the bulk of a crown-piece; while the greater part of the five, ten, and twenty dollar pieces were not from the United States Mint, but were coined and issued by private firms in San Francisco.

¹ “At the turn of the 19th century, the upheaval of the "Reign of Terror" and Napoleonic Wars resulted in a worldwide rise in gold prices. With the U.S. Mint statutorily bound to the weight specifications and 15 to 1 silver/gold ratio defined by the Act of 1792, the fluctuating market price of precious metals wreaked havoc with U.S. coinage, particularly the largest gold coin, the flagship \$10 Capped Bust "Eagle." By 1795, an ounce of gold—worth 15 ounces of silver in the United States—was worth 15.5 ounces of silver in Paris. That was enough motivation for bullion brokers to buy United States gold coins, mostly with Latin American silver coins, and ship them to Paris to be sold. By 1813 the ratio would reach 16.25:1, and before long, 98% of all U.S. gold coinage would be destroyed. At the end of 1804, President Thomas Jefferson ordered eagle production stopped. It would be thirty-four years before production resumed.”

“By the early 1830s, with Latin-American revolutionary chaos subsiding, Mexican silver exports jumped. This fact, combined with Congress' new 16-to-1 silver/gold ratio, U.S. coinage flourished. Mintages ballooned dramatically, and the introduction of steam powered coining presses in 1836 only enhanced the Mint's production capacity. While the ratio change—which favored silver—should have driven those coins from circulation, what actually occurred was an increase in the number of silver coins struck, particularly the smaller issues. Apparently Mexican mine owners found it profitable enough to sell their ore to the convenient and silver-hungry American market, despite the lower price. The U.S. was only too happy to turn their bullion into coins.”
<http://www.coinresource.com>

² A Real was slightly smaller than a 17th century British Shilling, which was made of 12 pence each. The rate of 9 pence per Real reflects Colonial exchange rates of 3 Shillings to 4 reales. This makes the 8 Reales pieces trade even with one double Florin, or 28 Reales to a Guinea during Colonial times.

Silver was still more scarce, and many pieces were consequently current at much more than their value. A quarter of a dollar was the lowest appreciable sum represented by coin, and any piece approaching it in size was equally current at the same rate. A franc passed for a quarter of a dollar while a five-franc piece only passed for a dollar, which is about its actual worth. As a natural consequence of francs being thus taken at 25 per cent. More than their real value, large quantities of them were imported and put into circulation. In 1854, however, the bankers refused to receive them, and they gradually disappeared.

--J. D. Borthwick, *The Gold Hunters*, 1857, p 247-248

American coinage, as invented by Alexander Hamilton was a mixed decimal/fractional system denominated in Eagles, Dollars, Dimes, and Cents with fractions of half and quarter eagles, half and quarter dollars, half dimes, and half cents. The Spanish division into eighths did not fit well with a decimal system but survives in our stock market's pricing system. In 1849 the availability of gold from California made the production of gold coins practical. Congress authorized issue of the Eagle series with a gold dollar and the Double Eagle being added.³

The supplies of gold from California depressed that gold's value in relation to silver, leading to widespread hoarding and melting of silver coins, since they were worth more as metal than as money. Silver coins nearly disappeared from US circulation by 1851, when \$100 of silver coins contained \$106.60 worth of silver. In 1853 the amount of silver in US coins was reduced to match the new value.

Novel coins were also introduced before and during the Civil War. In 1857 the small cent was introduced to replace the unpopular large cent. The Bronze 2 cent was coined from 1864 to 1873. The "trime" 3 cent silver was introduced in 1851 along with a \$3 gold to coincide with the issue of the 3 cent postage stamp. Trimes were used in great quantity but became unpopular because they were so easy to lose and because their alloy tarnished quickly. Nickel was introduced for the 3 cent and 5 cent pieces in 1865, allowing a more convenient size and a more durable coin. A double dime was tried from 1875 to 1878, after our period of interest.

During the entire two decades between 1840 and 1859, the amount of US coin nearly tripled. Even so, there were only an average of 6 pennies per person minted. In those 20 years, even with the gold from California, there was only \$20 in cash for each person in the country. Of that money \$17 was gold rush gold coin -- \$12 in double eagles.

During the Civil War the first US government banknotes were printed, including fractional denominations and postage stamp notes.

³ "The first California gold to reach the Philadelphia Mint was dispatched by the territory's Governor, Col. R.B. Mason to Secretary of War William L. Marcy. Most of this shipment of just over 230 ounces was coined into Quarter Eagles, \$2.50 pieces given an incuse stamp CAL over the eagle. This coinage was small, but it soon became obvious that the sheer mass of gold reaching the mints was going to require a much larger denomination than the quarter eagle, half eagle and eagle then authorized. North Carolina Congressman James Iver McKay, a powerful member of the House Ways and Means Committee, had already prepared legislation authorizing the smallest U.S. gold coin, the gold dollar. Acceding to the pressing need to mint gold into larger coin form, McKay was quickly persuaded to amend his bill to include another new gold coin at the opposite end of the spectrum, the Double Eagle or \$20 piece. The authorizing statute was passed by Congress on March 3, 1849." - <http://www.coinresource.com>

To all this complexity we can add the fact that about half of the Gold Rush population were not native-born Americans. Money from their native lands along with money obtained enroute, was also traded.

What Happened to All that Gold?

Miners and merchants were faced with the problem of how to convert the gold dust and nuggets from the gold fields into money. Dust varied in purity depending on source (the farther downstream the higher the purity) and honesty of the participant (brass shavings are documented as being passed off to San Francisco business, for example). Amalgam balls, formed by dissolving the gold in mercury and boiling away the mercury, were harder to lose, but still varied in purity and weight. Coins were originally invented because of the need for standardized weight and purity of the monetary metal.

About 70% of the total gold produced in California in the first ten years of the Gold Rush had been minted as US coin by 1859. Much of the remainder was exported and entered coinage in other countries, while another fraction became bullion reserves or was used for industrial or decorative purposes.

Until the San Francisco mint opened in 1854, the US mints were at the other end of a dangerous three-month plus journey. The US Constitution prohibits the states from coining money, but it does not prohibit private individuals from making coins. Local issues of private gold coins began in 1830 in Rutherfordton, North Carolina, near the area's gold mine, by a jeweler, Christoph Bechtler. Over the next decade, Bechtler produced about \$2.2 Million in coins, half of them as gold dollars. In California, local assay offices and jewelers took advantage of this experience by taking in gold in exchange for coins of their own manufacture. These are the "California Gold" private mintage issues.⁴

April 20, 1850, the California legislature established the state Assay Office which produced gold ingots, stamped with exact values, such as \$35.96. Such a state agency was, however, unconstitutional, so the federal assay office was established in 1851 in San Francisco with Augustus Humbert as assayer and Moffet & Co. as the subcontractor.

Anything passing San Francisco, even the 49er's laundry returning from the Sandwich Islands, became subject to inspection and duty at the San Francisco Customs House. Duty could only be paid in coins, not in dust or ingots. State and city taxes (\$25 per foreign-born miner, \$5 poll tax, 1% state property tax, 2% city property tax) also would be paid in cash. The California Gold issues were accepted as legal tender (though not considered US coins) between 1850 to 1852.

Banker James King of William, sent coins from the firms of Baldwin, Schultz, and Dubosq to the US Assay office in March 1851. The coins averaged 97-99% of the stated content, which King had publicized in the newspapers. The publicity caused a panic during which King and

⁴ . "By the end of 1849 there were approximately eighteen such companies in California, almost all located in the San Francisco area. Norris, Gregg and Norris was the first of these concerns to issue coins. Norris produced five-dollar coins, and virtually all of these were minted in Benicia, although inscribed San Francisco."

his friends bought the coins at 80% of their value, melted them, and sold at handsome profit to the Assay office.

A Mormon mint operated in Salt Lake City between 1849 and 1860, producing 2 ½, 5, 10, and 20 dollar coins.

In Sacramento, Dr. J. S. Ormsby and Major William M. Ormsby minted 5 and 10 dollar coins, (unfortunately with less gold content than standard) in 1849.

Private coinage was officially stopped June 8, 1864, by act of Congress, but debased versions were made for the jewelry and tourist trade for many years thereafter. There was little enforcement of the ban until 1884. Sometimes coins or tokens were made to conform to the 1864 act by lacking a denomination or by such denominations as “Not 1 Dollar”.

It was cheaper and more convenient to make larger coins from the flow of gold, so Congress authorized the production of the Double Eagle and the Moffat company minted the legendary \$50 “slug”. On the other hand, there were few small coins available for change, so locally-produced fractional gold coins were also minted in quantity. Approximately 15,000 fractional gold coins still exist in over 500 varieties.

During period, the half-eagle and dollar were the common coins of day-to-day commerce (roughly like our \$20 and \$100 bills) and the double eagle was primarily used in banking.

Moffat & Co. John Moffat and his three partners began striking five and ten-dollar gold coins in 1849 and continued until the end of 1853. Moffat’s reputation remained unimpeachable throughout the era, and its coins passed at par with federal coinage, the only privately minted coins to do so. When the company finally closed its doors in December, 1853, its equipment was purchased by the San Francisco Mint.

John Kellogg was a former cashier for Moffat & Co. While only in operation for two years, 1854 and ‘55, Kellogg & Co. produced more than six million dollars in gold coinage, including \$50 coins.

Samuel Wass and Agoston Molitor were two Hungarian mining engineers who established an assay office in San Francisco in 1851. With a reputation for scrupulous honesty second only to John Moffat’s, the two men issued five and ten-dollar pieces in 1852. When the Assay Office and later the federal mint began striking their own gold coins, Wass and Molitor ceased their coining operations. But when the newly opened mint failed to produce enough coinage to satisfy demand and then closed in 1855 because of a lack of parting acids, local bankers and merchants petitioned the firm to resume production. Obliging, they and Kellogg issued ten, twenty, and fifty-dollar gold pieces in 1855, the only circulating \$50 coins ever minted in California.

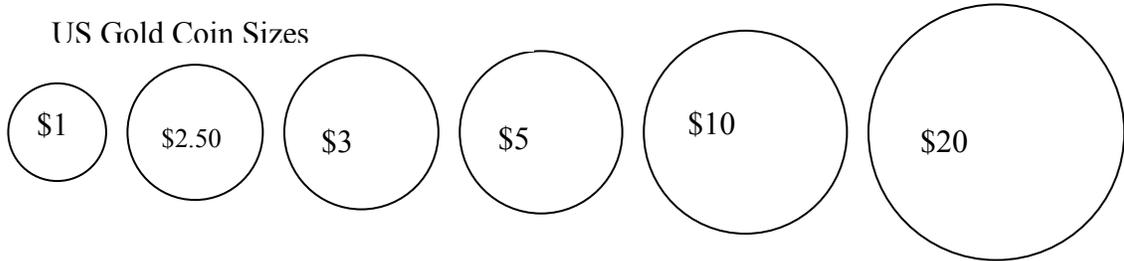
Miners Bank ten-dollar coins were crudely manufactured, struck using the ancient hammer method, as coining presses were unavailable at the time. Baldwin & Co. issued fives and tens in 1850, adding twenties the following year. Other gold coin issuers in 1849-50 include such

names as J.H. Bowie, Cincinnati Mining & Trading Co., Dubosq & Co., Massachusetts and California Co., J.S. Ormsby, Pacific Company and Shultz & Co.

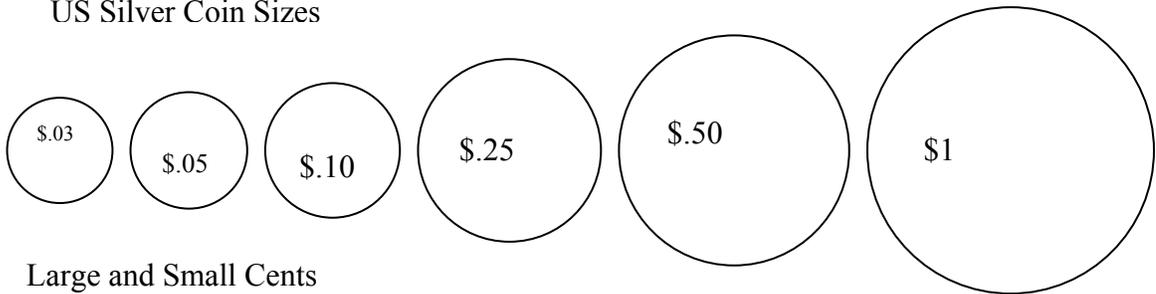
Fractional gold coins (half and quarter gold dollars) were made by jewelers in Sacramento and San Francisco. They either have no date (1852), or are dated from 1852 through 1856. The San Francisco mint started full production of silver coins in 1856, so the need for these hard to use pieces was eliminated that year.

Relative Sizes US Coins 1840-1859

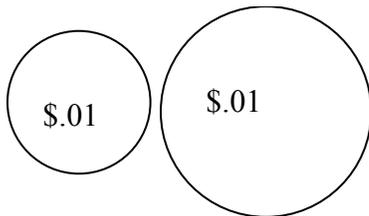
US Gold Coin Sizes



US Silver Coin Sizes



Large and Small Cents



US Coins Minted 1840-1859

US Silver, Bronze 1840-1859

Denom	Years	Weight	Diameter	Mintage 40-59		Value		CPHP	DPHP
Large Cent	1793-1857	10.89 g	28 mm	70,917,303	15%	709,173	1%	306	\$3
Small Cents	1856-	4.67 g	19 mm	78,450,000	17%	784,500	1%	338	\$3
Silver Trime	1851-1873	0.80 g	14 mm	41,796,900	9%	1,253,907	2%	180	\$5
Half Dime	1794-1873	1.34 g	15.5 mm	63,407,605	14%	3,170,380	4%	273	\$14
Dime	1796-	2.49 g	17.9 mm	59,947,310	13%	5,994,731	8%	258	\$26
Quarter Dollar	1796-	6.68 g	24.3 mm	71,957,607	15%	17,989,402	25%	310	\$78
Half Dollar	1794-	13.36 g	30.6 mm	78,194,910	17%	39,097,455	55%	337	\$169
Dollar	1836-1935	26.73 g	38.1 mm	1,585,323	0.3%	1,585,323	2%	7	\$7
TOTAL				466,256,958	100%	\$70,584,871	100%	2,010	\$304

CPHP = Coins per Hundred Persons⁵

DPHP = Dollars value per Hundred Persons

US Gold 1840-1859

Denom	Years	Weight	Diameter	Mintage 40-59		Value		CPHP	DPHP
1 Gold US	1849-1889	1.672 g	13 mm	16,456,181	32%	16,456,181	4%	71	\$71
¼ Eagle US	1821-1929	4.18 g	18 mm	7,724,422	15%	19,311,055	5%	33	\$83
\$3 Gold US	1854-1889	5.015 g	20.5 mm	334,065	1%	1,002,195	0%	1	\$4
½ Eagle US	1795-1929	8.359 g	21.6 mm	8,127,499	16%	40,637,495	10%	35	\$175
Eagle US	1838-1933	16.718 g	27 mm	5,017,427	10%	50,174,270	12%	22	\$216
Double Eagle US	1850-1933	33.436 g	34 mm	14,099,375	27%	281,987,500	69%	61	\$1,216
TOTAL				51,758,969		\$409,568,696	100%	223	\$1,766

CPHP = Coins per Hundred Persons

DPHP = Dollars value per Hundred Persons

Total US Coins 1840-1859

	Mintage 40-59		Value		CPHP	DPHP
<i>Bronze</i>	149,367,303	29%	1,493,673	0.3%	644	\$6
<i>Silver</i>	316,889,655	61%	69,091,198	14%	1,366	\$298
<i>Gold</i>	51,758,969	10%	409,568,696	85%	223	\$1,766
TOTAL	518,015,927	100%	480,153,567	100%	2,234	\$2,070

CPHP = Coins per Hundred Persons

DPHP = Dollars value per Hundred Persons

Gold Mined in California 1840-1859

	Troy Ounces	Value (then)
1848	11,866	245,301
1849	491,072	10,151,060
1850	1,996,586	41,276,106
1851	3,673,512	75,938,232
1852	3,932,631	81,294,700
1853	3,270,803	67,613,487
1854	3,358,867	69,433,931
1855	2,684,106	55,485,345
1856	2,782,018	57,509,411
1857	2,110,513	43,628,172
1858	2,253,846	46,591,140
1859	2,217,829	45,846,599
TOTAL	28,783,649	\$595,013,484

US gold coins during this time represent 69% of the total amount of California gold mined. Current gold production is around 900,000 ounces per year, worth \$360,000,000 annually.

⁵ US population in 1850 was 23,191,876

Coin Timeline:

1848	1,389 quarter eagles quarter eagle were made from some 230 ounces of native California ore shipped eastward. Marked CAL on reverse.
1849	Gold Dollar production begins, ends in 1889. Private mints in San Francisco, Sacramento, Stockton, Salt Lake City.
1850	Coronet Type 1 Double Eagle begins. California State Assay Office issues stamped ingots.
1851	Silver Three-Cent Pieces begin, continue until 1873. Federal Assay Office in S. F. replaces California Assay Office; subcontracts production to Moffet.
1852	
1853	Silver coinage reduced in weight and arrows placed on the reverse during next three years to show the lower weight. Moffet stops coinage at end of year.
1854	San Francisco Mint established, purchased Moffet's machinery and coins double eagles. Indian Head Liberty Three Dollar Pieces begin production, end in 1889.
1855	Wass and Molitor produces \$50 gold pieces.
1856	Small "Flying Eagle" cents, with a new alloy begin. San Francisco mint begins producing silver coins; gold fractionals no longer needed.
1857	Braided Hair Cents (large cents) end production. Foreign coins stop being legal tender in the US.
1858	
1859	Indian Head Cent begins production, replaces "Flying Eagles"
1860	
1861	
1862	
1863	
1864	Two Cent piece begins. First coin with "In God We Trust". Private coinage becomes illegal.
1865	Three Cent Nickel begins, ends in 1889.
1866	Shield Nickel begins; silver half-dime continues until 1873.
1867	
1868	
1869	
1870	