

Charts: A History of Prices

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Interest Rates

Commodity Prices

Updated to end-2014

Stock Prices

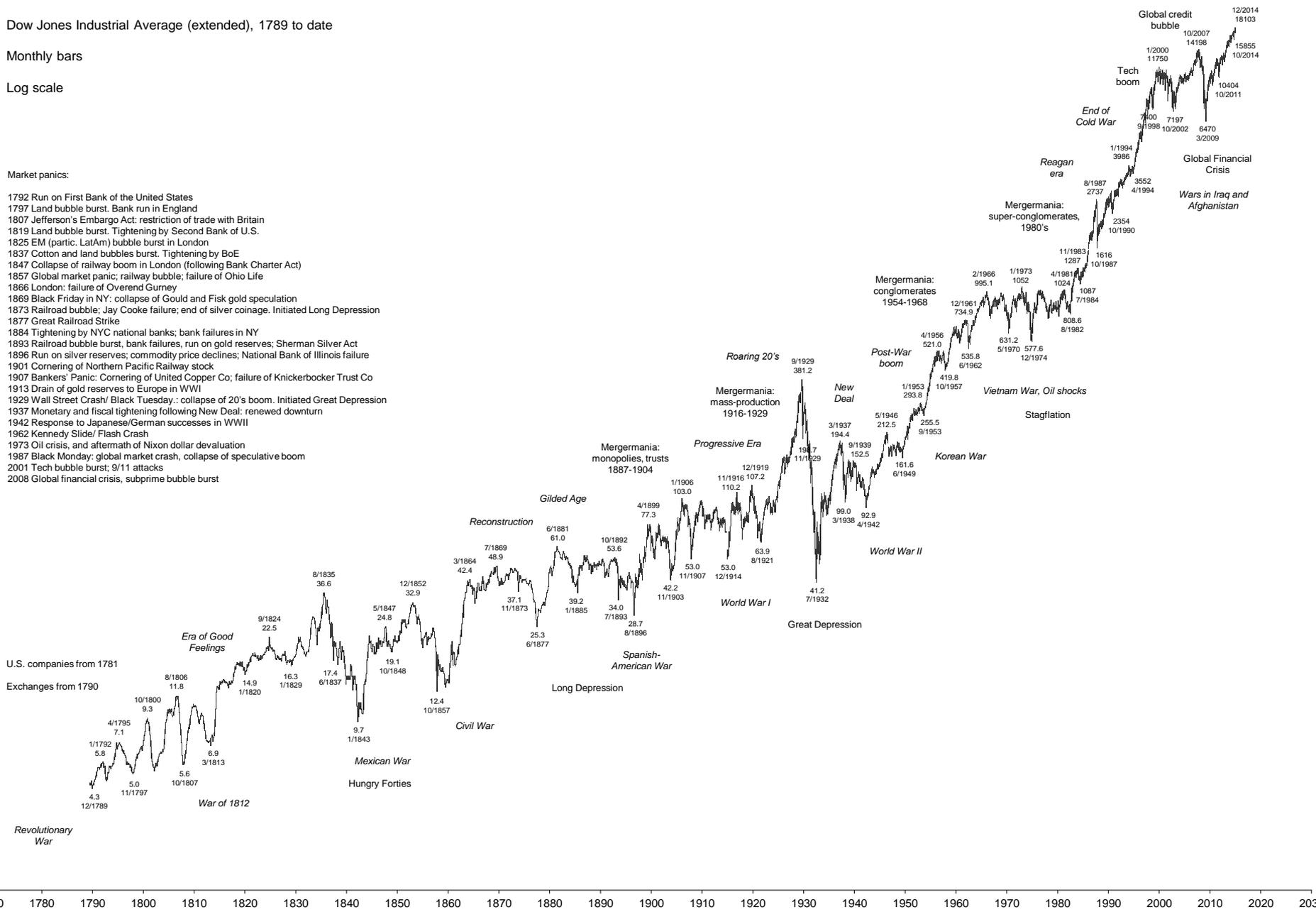
Dow Jones Industrial Average (extended), 1789 to date

Monthly bars

Log scale

Market panics:

- 1792 Run on First Bank of the United States
- 1797 Land bubble burst, Bank run in England
- 1807 Jefferson's Embargo Act: restriction of trade with Britain
- 1819 Land bubble burst. Tightening by Second Bank of U.S.
- 1825 EM (partic. LatAm) bubble burst in London
- 1837 Cotton and land bubbles burst. Tightening by BoE
- 1847 Collapse of railway boom in London (following Bank Charter Act)
- 1857 Global market panic, railway bubble, failure of Ohio Life
- 1866 London: failure of Overend Gurney
- 1869 Black Friday in NY: collapse of Gould and Fisk gold speculation
- 1873 Railroad bubble: Jay Cooke failure, end of silver coinage. Initiated Long Depression
- 1877 Great Railroad Strike
- 1884 Tightening by NYC national banks; bank failures in NY
- 1893 Railroad bubble burst, bank failures, run on gold reserves; Sherman Silver Act
- 1896 Run on silver reserves; commodity price declines; National Bank of Illinois failure
- 1901 Cornering of Northern Pacific Railway stock
- 1907 Bankers' Panic. Cornering of United Copper Co; failure of Knickerbocker Trust Co
- 1913 Drain of gold reserves to Europe in WWI
- 1929 Wall Street Crash/ Black Tuesday.: collapse of 20's boom. Initiated Great Depression
- 1937 Monetary and fiscal tightening following New Deal: renewed downturn
- 1942 Response to Japanese/German successes in WWII
- 1962 Kennedy Slide/ Flash Crash
- 1973 Oil crisis, and aftermath of Nixon dollar devaluation
- 1987 Black Monday: global market crash, collapse of speculative boom
- 2001 Tech bubble burst; 9/11 attacks
- 2008 Global financial crisis, subprime bubble burst



U.S. companies from 1781

Exchanges from 1790

Interest Rates

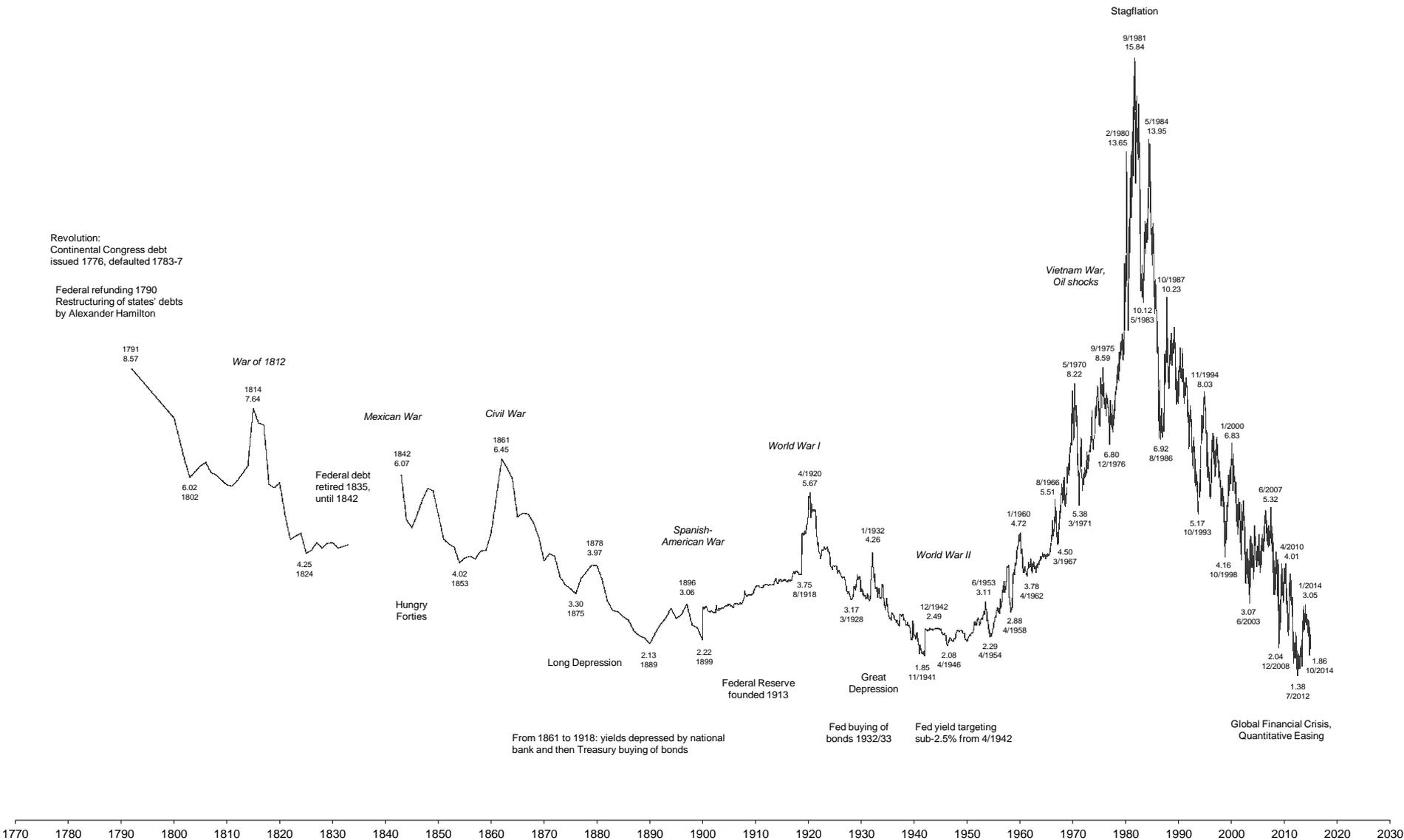
Yield on 10-year U.S. Treasuries, 1791 to date

Monthly bars

Linear scale

Revolution:
Continental Congress debt
issued 1776, defaulted 1783-7

Federal refunding 1790
Restructuring of states' debts
by Alexander Hamilton

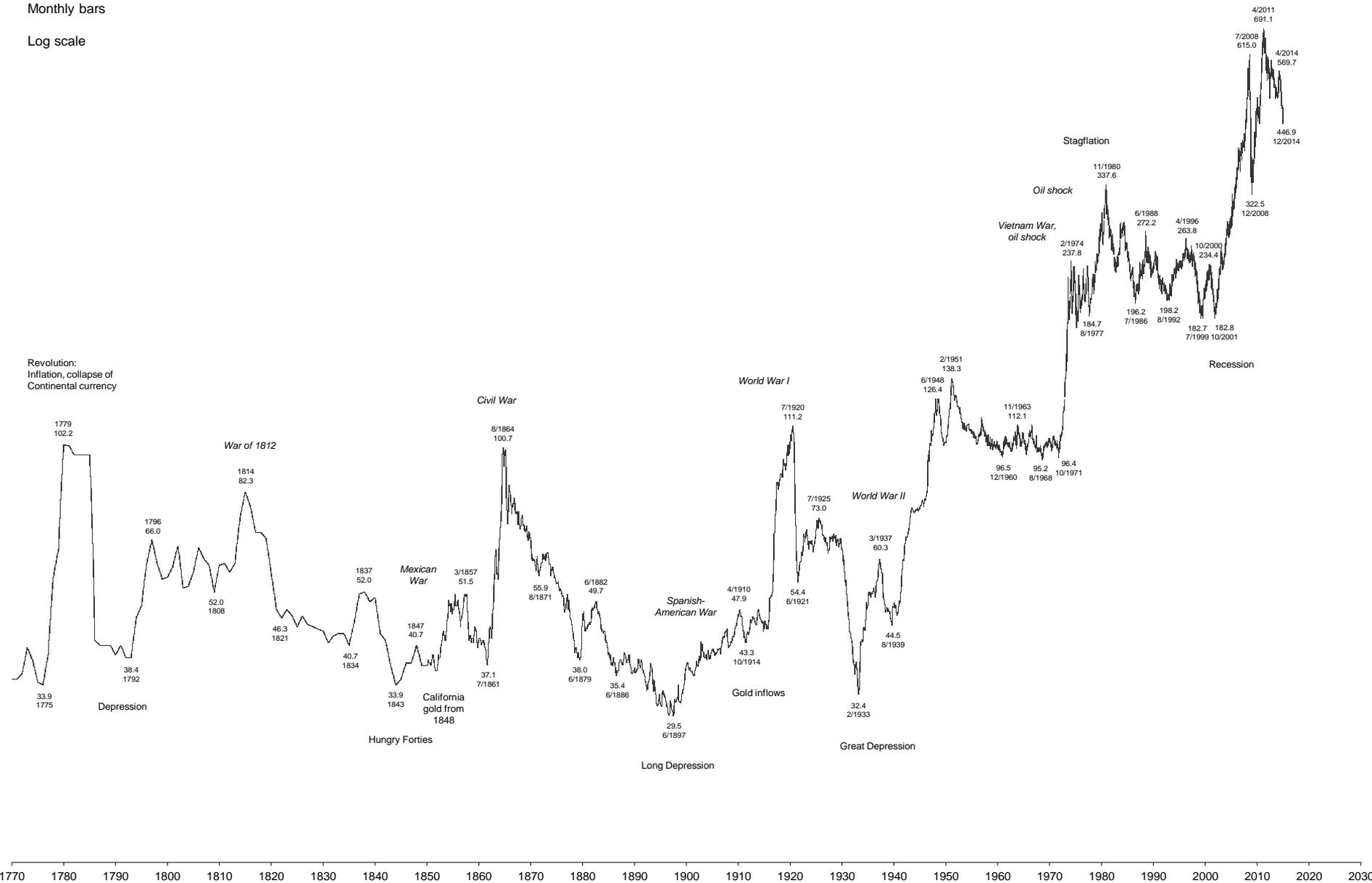


Commodity Prices

Continuous Commodity Index (extended), 1770 to date

Monthly bars

Log scale

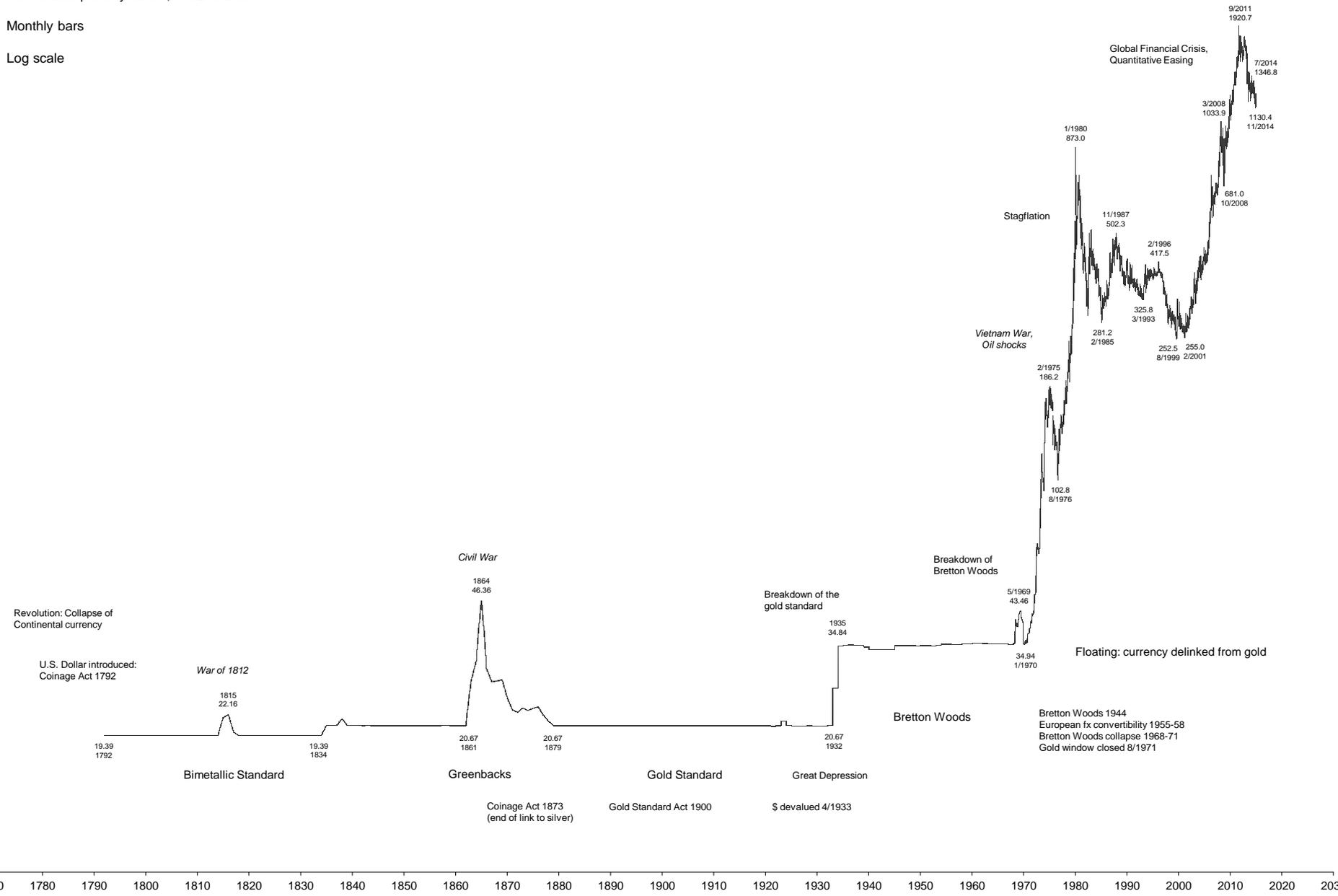


The Gold Price

U.S. dollars per troy ounce, 1792 to date

Monthly bars

Log scale

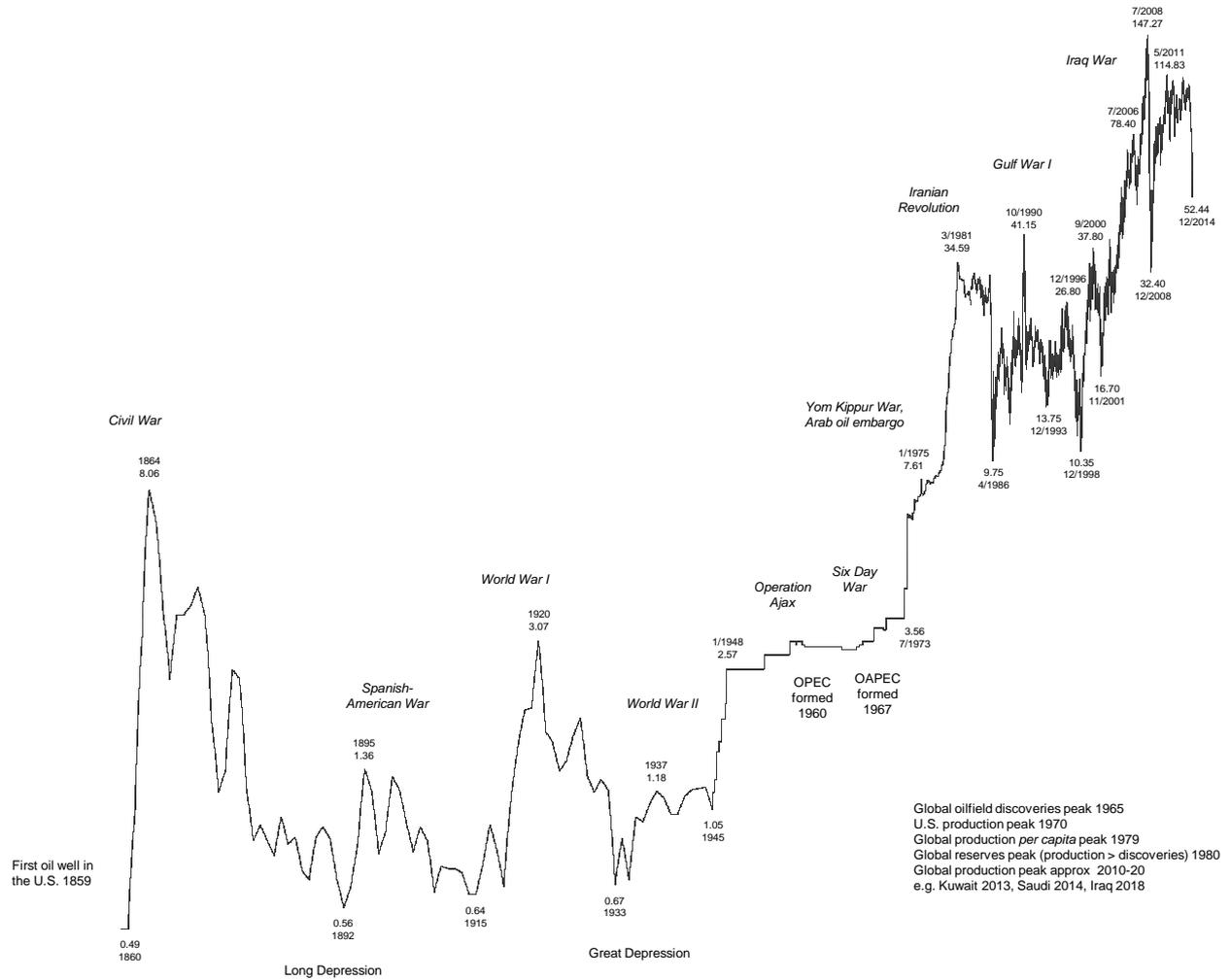


The Oil Price

U.S. dollars per barrel, 1860 to date

Monthly bars

Log scale

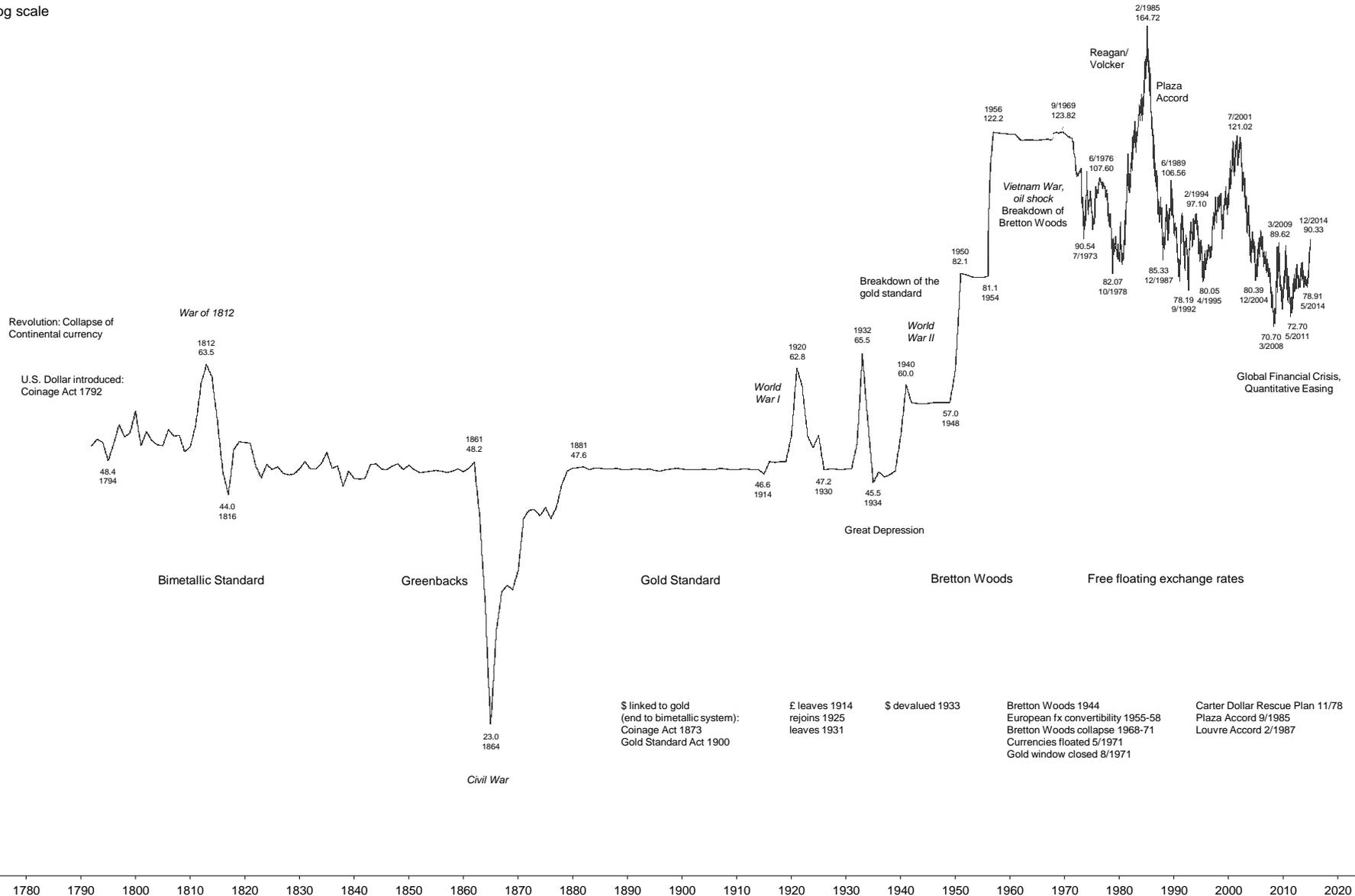


The U.S. Dollar

U.S. Dollar Index (extended), 1792 to date

Monthly bars

Log scale



Stock Prices

Composite index: Genoa 1509-1602, Holland 1602-1693, England 1693-1789, U.S. 1789 to date

Yearly bars

Log scale

Market panics:

- 1557 Spanish-Habsburg bankruptcy
- 1621 Kipper-und-Wipperzeit (start of Thirty Years' War)
- 1672 Disaster Year: invasion of Holland by France and England
- 1696 English government credit crisis (war with France)
- 1720 South Sea Bubble (and Mississippi Bubble)
- 1761 Crisis in American colonies over Navigation Acts
- 1769 Bengal Bubble (British East India Co)
- 1772 Credit Crisis (Britain & U.S.)
- 1792 Collapse of First Bank of the United States

For later dates see monthly chart

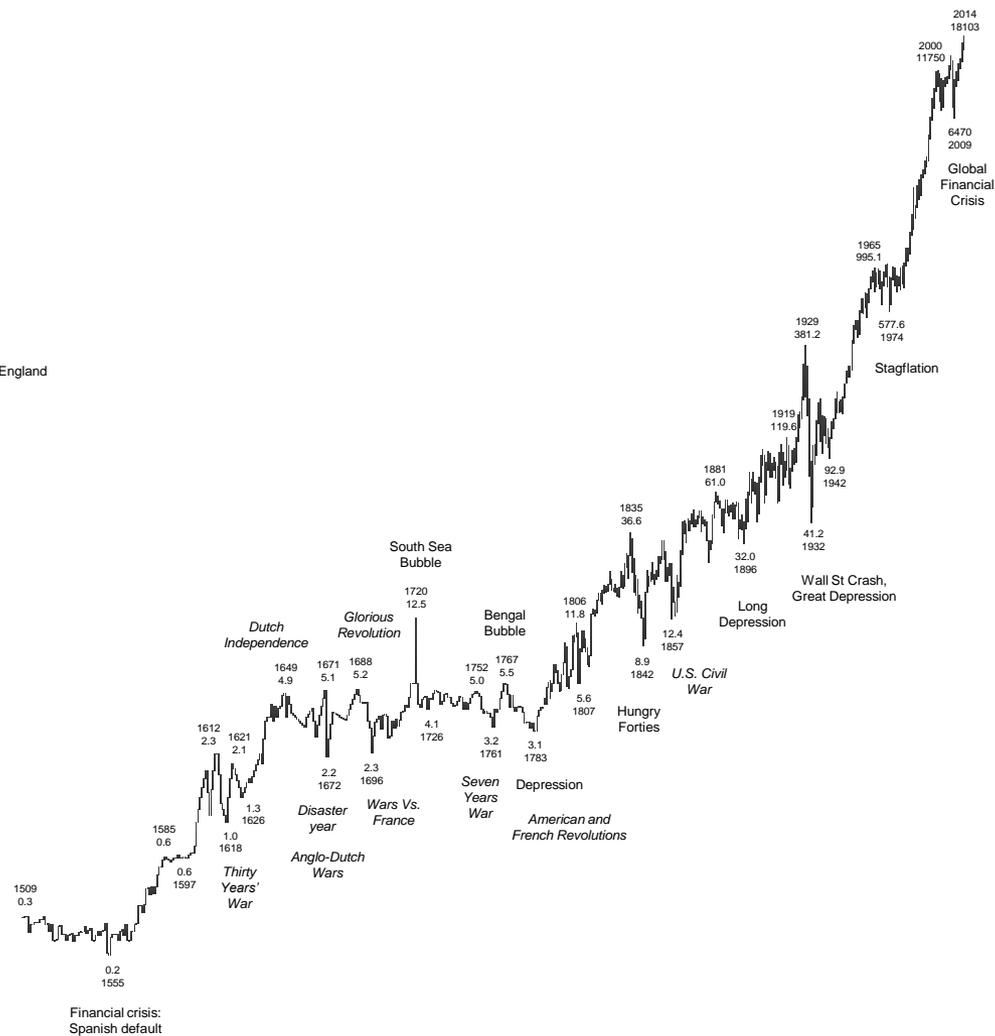
From 12th century: evolution of joint-stock companies from merchants' guilds: Partnerships in maritime trading companies in Italy from c.1150.

Bank of St George, bankers to Spanish Crown, founded 1407, shares traded in Genoa from 1509: perpetual annuities issued by Republic of Genoa, paying dividends varying with profits of the bank

Dutch East India Co. (VOC) shares traded from 1602; establishment of Amsterdam Stock Exchange

England: East India Co. shares traded from 1688; establishment of London Stock Exchange

U.S. shares traded from 1781, listed on New York Stock Exchange from 1790

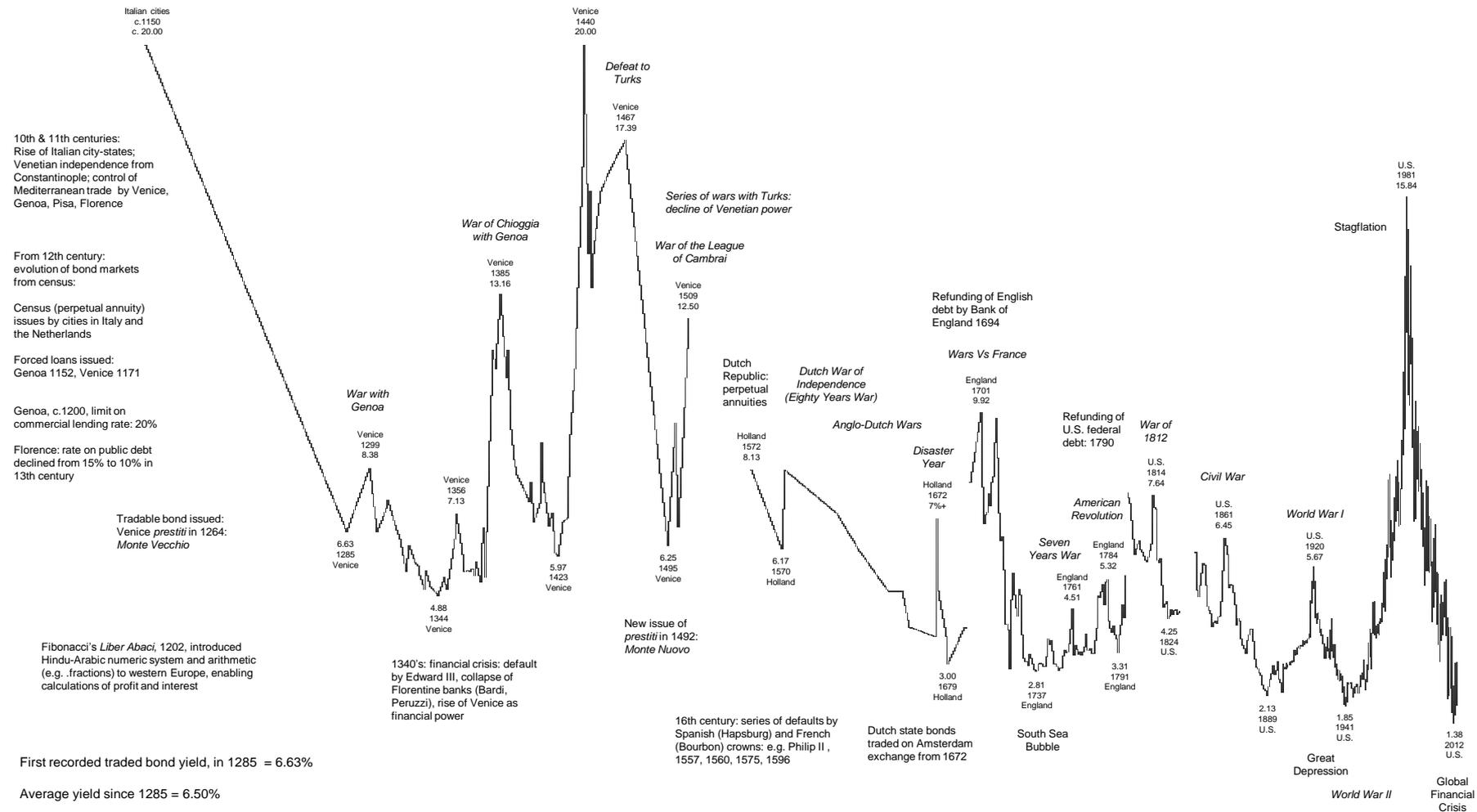


Interest Rates

Yields on long-term sovereign debt: Venice 1285-1509, Holland 1550-1693, England 1694-1797, U.S. 1798 to date

Yearly bars

Linear scale

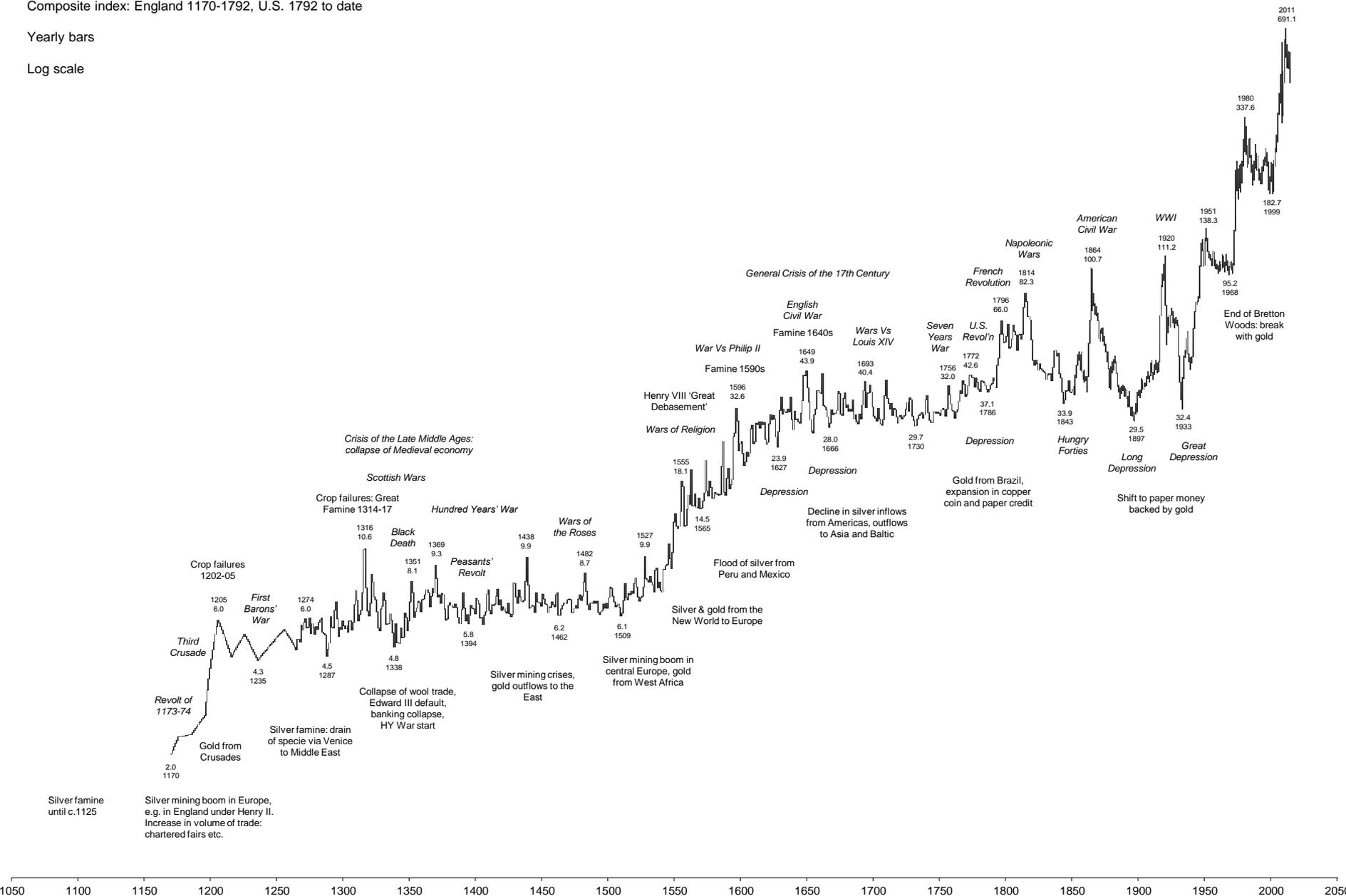


Commodity Prices

Composite index: England 1170-1792, U.S. 1792 to date

Yearly bars

Log scale



The Gold Price

Sterling price converted to Dollars 1257-1791, Dollar price 1792 to date

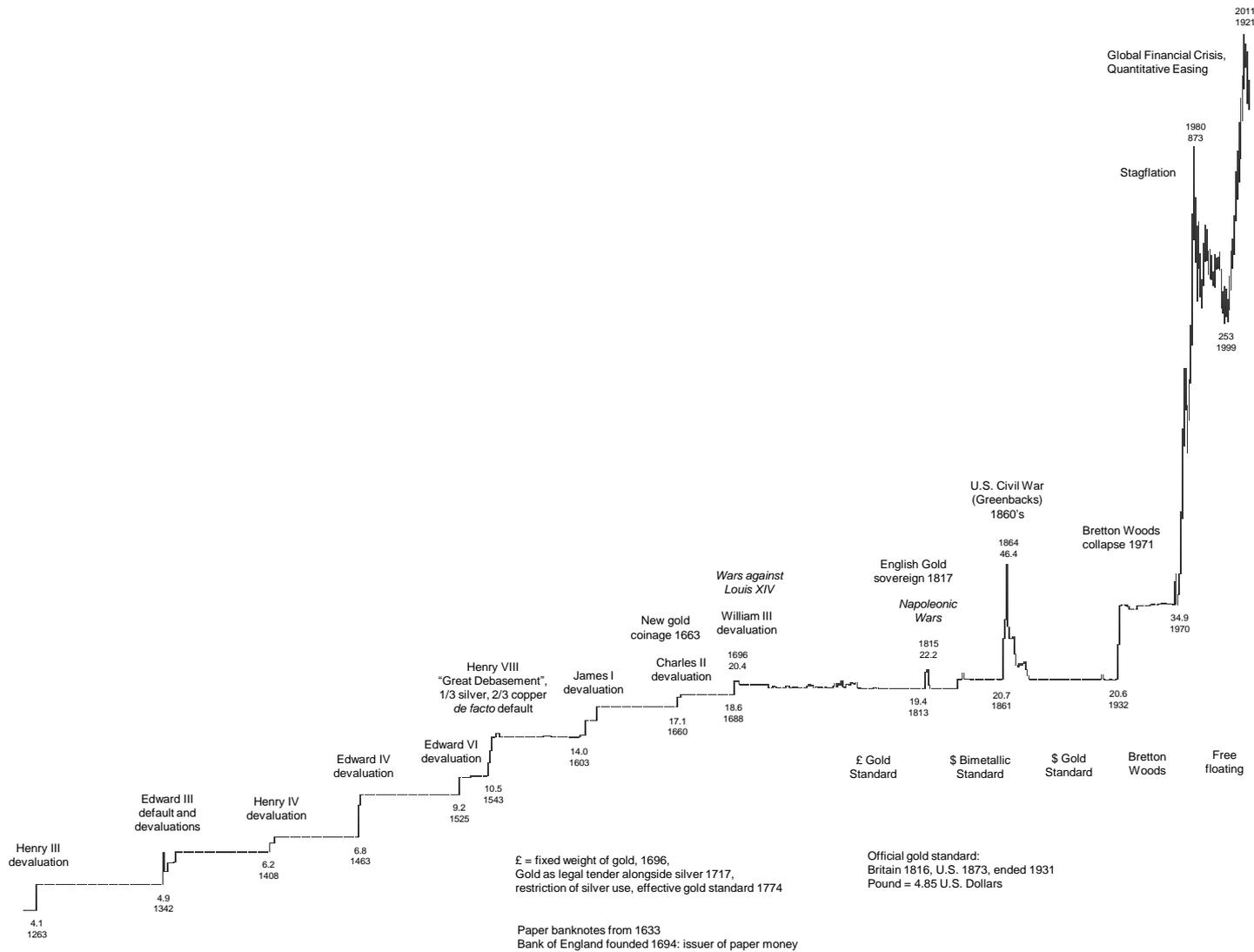
Yearly bars

Log scale

13th century: re-introduction of gold coinage to Europe from the East. Byzantine and Arabic gold coins circulated.

English Gold penny introduced by Henry III in 1257. Noble: first gold coin produced in quantity, in 1344 by Edward III.

International currency:
 Florence florin 1252
 Venice ducat 1284



Interest Rates

Lending rates in Mesopotamia 3000 BC-600 BC, in Greece and Rome 600 BC-300 AD; Yields on Western government bonds 1150 to date

Decennial bars

Linear scale

From c. 3000 BC: use of metals as money by weight in Mesopotamia. Temples as proto-banks: repositories of wealth, lending at interest

Ancient Sumer: Custom of 1 shekel per mina per month = 20%; Rates of 25% recorded (also: India: Laws of Manu, 24%)

Ur: financial centre of Sumer until crash of 1788 BC caused by cancellation of debts under Rim-Sin

Babylon: Code of Hammurabi, 1772 BC. Codified earlier Sumerian custom of 20%. Average rates of 10-25% recorded through Old Babylonian, Assyrian and Neo-Babylonian iterations, until Persian conquest 539 BC, then rates of 40+%

Adoption of Near Eastern financial practices by Greek city states

5th century Greece: spread of coined money and credit; freeing of hoarded capital for productive loans (after Persian Wars, silver discoveries at Laurion)

3rd/4th century Rome: inflation, fiscal crisis

Commercial Revolution of the Middle Ages: easing of prohibitions on usury, rise of banking and state finance in Italy and the Netherlands; evolution of bond markets from census annuities

Dark Ages in the West: Anti-usury laws, e.g. Capitularies of Charlemagne 814 AD

Origins of interest rates:

Natural multiplying of borrowed livestock via reproduction: hence words for interest in ancient languages: Sumerian *mash* = calf, Greek *tokos* = calf, Latin *pecus* = flock, Egyptian *ms* = give birth.

Uruk, "city of sheepfolds", pastoral agricultural economy; had a numerical and writing system for quantifying and recording contracts, and the Mesopotamian calendar system for recording time in lunar months and solar years.

Early rates of interest determined by the standard units of quantity and time, e.g. 1 shekel per mina per month = 20% p.a. in Babylon (Code of Hammurabi), 1 ounce per pound per year = 8.33% p.a. in Rome (Twelve Tables).

Debt crisis in Archaic Greece: usurious loans, payment in kind, debt servitude, until Solon's reforms, 594 BC

Sulla 88 BC Limit 100th /mth = 12%

State bankruptcy during Social War 90 BC and civil wars 49-31 BC

Credit crisis 33 AD

Eastern (Byzantine) Empire: Constantine, 325 AD, limit 12.5%; Code of Justinian 528 AD, limit 8%; 850 AD limit raised to 11.5%

373 BC: Defaults by Greek states on loans at Delos

Greece: Temple at Delos From c.500 BC, 10%

Rome: Twelve Tables 443 BC Limit 1 oz/lb/year = 8.33%

8% 300-200 BC Athens/Rome

Roman expansion: inflows of silver & gold, falling rates

4% 1 AD Rome

Expansion of coinage under Julius Caesar and Augustus. Reduction under Tiberius: credit crisis in 33 AD

Rome 100 AD 5%

Rome 300 AD 15+% (?)

Athens 600 BC 16%

Italian cities c.1150 20%

Venice 1430s 20.00

U.S. 1980s 15.84

England 1730s 9.92

Holland 1570s 8.13

U.S. 1910s 7.64

6.25 1490s Venice

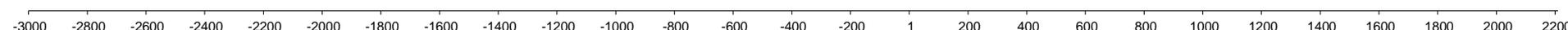
4.88 1340s Venice

3.00 1670s Holland

2.81 1730s England

1.85 1940s U.S.

1.38 2010s U.S.

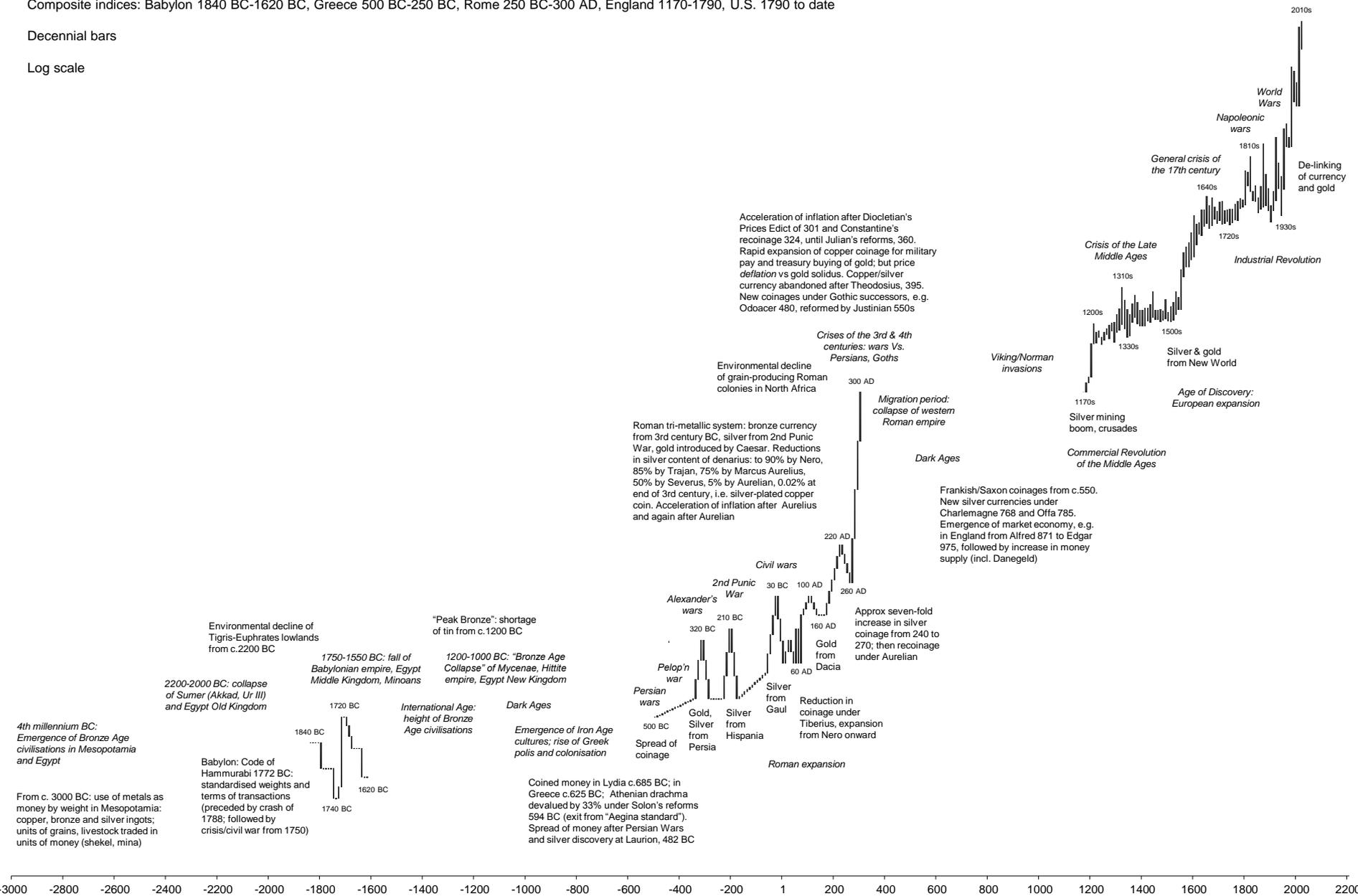


Commodity Prices

Composite indices: Babylon 1840 BC-1620 BC, Greece 500 BC-250 BC, Rome 250 BC-300 AD, England 1170-1790, U.S. 1790 to date

Decennial bars

Log scale



4th millennium BC: Emergence of Bronze Age civilisations in Mesopotamia and Egypt

2200-2000 BC: collapse of Sumer (Akkad, Ur III) and Egypt Old Kingdom

Babylon: Code of Hammurabi 1772 BC: standardised weights and terms of transactions (preceded by crash of 1788; followed by crisis/civil war from 1750)

1750-1550 BC: fall of Babylonian empire, Egypt Middle Kingdom, Minoans

1200-1000 BC: "Bronze Age Collapse" of Mycenae, Hittite empire, Egypt New Kingdom

International Age: height of Bronze Age civilisations

Dark Ages
Emergence of Iron Age cultures; rise of Greek polis and colonisation

Coined money in Lydia c.685 BC; in Greece c.625 BC; Athenian drachma devalued by 33% under Solon's reforms 594 BC (exit from "Aegina standard"). Spread of money after Persian Wars and silver discovery at Laurion, 482 BC

Roman tri-metallic system: bronze currency from 3rd century BC, silver from 2nd Punic War, gold introduced by Caesar. Reductions in silver content of denarius: to 90% by Nero, 85% by Trajan, 75% by Marcus Aurelius, 50% by Severus, 5% by Aurelian, 0.02% at end of 3rd century, i.e. silver-plated copper coin. Acceleration of inflation after Aurelius and again after Aurelian

Environmental decline of grain-producing Roman colonies in North Africa

Acceleration of inflation after Diocletian's Prices Edict of 301 and Constantine's recoinage 324, until Julian's reforms, 360. Rapid expansion of copper coinage for military pay and treasury buying of gold; but price deflation vs gold solidus. Copper/silver currency abandoned after Theodosius, 395. New coinages under Gothic successors, e.g. Odoacer 480, reformed by Justinian 550s

Crisis of the 3rd & 4th centuries: wars Vs. Persians, Goths

Migration period: collapse of western Roman empire

Dark Ages

Frankish/Saxon coinages from c.550. New silver currencies under Charlemagne 768 and Offa 785. Emergence of market economy, e.g. in England from Alfred 871 to Edgar 975, followed by increase in money supply (incl. Danegeld)

Persian wars
Pelop'n war
Alexander's wars
2nd Punic War
Civil wars
30 BC
100 AD
260 AD
220 AD
160 AD
60 AD
Silver from Gaul
Silver from Hispania
Gold, Silver from Persia
Silver from Dacia
Reduction in coinage under Tiberius, expansion from Nero onward

Approx seven-fold increase in silver coinage from 240 to 270; then recoinage under Aurelian

Viking/Norman invasions

Commercial Revolution of the Middle Ages

General crisis of the 17th century

Industrial Revolution

Age of Discovery: European expansion

Silver & gold from New World

Napoleonic wars

World Wars

De-linking of currency and gold