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## MONETARY STATISTICS BEFORE THE NATIONAL BANKING ERA

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From the establishment of the federal government through the Civil War, money in the United States consisted mainly of specie (gold and silver coins), bank notes (paper money issued by banks), bank deposits, and at times currency issued by the federal government. The U.S. Mint, established in 1792, produced coins of gold, silver, and copper. Foreign coins also circulated, especially Mexican, Latin American, and Spanish silver pesos. These and other designated foreign coins were legal tender for most of the period. The Mint assayed specimens of these coins and determined their legal tender values. Legal tender status for foreign coins was discontinued in 1857.

During this period, the United States was on a bimetallic standard. Both gold and silver coins were legal tenders, and when specific amounts of gold and silver were brought to the Mint, it was required by law to convert the metals into coin. The content of the silver dollar was set at 371.25 grains of silver, and the content of the gold dollar was set at 24.75 grains of gold, thus establishing a "bimetallic ratio" or "mint ratio" of 15 : 1. One rationale for bimetallicism was that gold coins would provide a convenient medium for large transactions, while silver coins would be convenient for small transactions. A second rationale, one that became more important after the Civil War, was that bimetallicism would reduce the threat of deflation and produce greater price stability. If the stock of one

metal, say gold, grew too slowly to produce stable prices, the other metal, silver, might be used in its place.

In practice, the ability of the United States to maintain both metals in circulation, and thus to satisfy the first rationale, was limited by the tendency of the coins made from the metal worth relatively more in world markets to be withdrawn from circulation and exported. In the early decades of the nineteenth century, the rising price of gold on world markets produced a situation in which most of the coin in circulation was silver. Partly to remedy this situation, the amount of gold in the gold dollar was reduced from 24.75 grains to 23.22 grains in 1834, thus establishing a mint ratio of 16 : 1, which was more in line with world markets. Although this change encouraged the circulation of gold, the main reason gold began to replace silver was the discovery of gold in California in 1848 and the related discoveries in other areas. Although silver did not entirely disappear, the circulation shifted rapidly toward gold in the 1850s. The idea that the cheaper money would replace the dearer (provided the two monies circulate at a fixed exchange rate owing to law, custom, or convenience) is known as Gresham's law, often summarized as "bad money drives out good," although "cheap money drives out dear" is more accurate.

Bank notes were payable in specie on demand except during financial crises or wars, when convertibility was suspended. Bank notes were issued by local private banks and by the First and Second Banks of the United States. The local banks were chartered by the states; the First and Second Banks were chartered by the federal government. The legal procedures for chartering local banks and the rules regulating banks varied greatly from state to state. In some states, banks were chartered individually by the state legislature but, under the so-called free banking laws, anyone could start a bank provided that the bank complied with certain rules and regulations. One of those regulations was that notes issued by free banks had to be backed by government bonds, typically bonds of the state where the bank was located. Perhaps the most important common feature of the early banking laws was that banks with charters from one state were not permitted to set up branches in other states. Restrictions on branching, particularly the ban on interstate branching, produced a system of geographically isolated banks that persisted well into the twentieth century and distinguished the U.S. banking system from the systems prevailing in other industrialized countries. In those countries, bank offices typically were branches of a few large banks with headquarters in the nation's financial center.

The large number of distinct bank notes in existence (because each bank issued its own notes) gave rise to an unusual currency system. Bank notes generally circulated in the vicinity of the bank that issued them. Notes taken into another region had to be converted into local money. Generally, a discount would be charged on nonlocal notes, analogous to the charges sometimes levied for withdrawing cash from an automated teller machine (ATM). The appropriate discounts on bank notes issued by solvent banks – and lists of notes of bankrupt banks, and counterfeits – were published in reference books known as bank note reporters. Although considerable research has been conducted on the determinants of the discounts and other aspects of the system, it is still not known whether the volume of discounted or counterfeit notes was sufficient to affect the accuracy of the monetary statistics from the era.

The First Bank of the United States was chartered in 1791 for a term of twenty years; the Second Bank was chartered in 1816,

again for a term of twenty years. The notes issued by the First and Second Banks of the United States enjoyed a higher status than those issued by state-chartered banks. The high status of their notes flowed from the decision to make them a legal tender for the payment of taxes, from the fact that the First and Second Banks alone had a nationwide system of branches, and from the patronage of the federal government enjoyed by the First and Second Banks. As might be expected, the competition between the state-chartered banks and the federally chartered banks was intense, and it was a major factor in the decisions not to renew the charters of the First and Second Banks.

Deposit banking in those days was similar in many respects to our modern system of deposit banking, but it was restricted, especially in the early years of the nineteenth century, to a relatively small class of people who were literate, numerate, and possessed of sufficient means to make deposit banking worthwhile. The share of deposits in the total supply of money, however, grew dramatically between 1800 and 1865. By 1860, deposits were a larger component of the stock of money than bank notes were (see Table Cj7–21).

The federal government did not issue paper money in peacetime, but during the War of 1812 and especially during the Civil War, large amounts of fiat paper money (money not redeemable in specie) were issued. The motive was simply the need for revenues to finance the wars. Taxes and borrowing were also used to finance the wars, but the printing press was an attractive alternative. In effect, printing new money was a low-cost (in terms of administrative expenses) way of taxing a widely held asset: money held by the public. The result of relying on money creation was substantial inflation. During the Civil War, both the North and the South experienced major inflation, but the inflation in the South was far more severe, in part because the South relied far more on printing money than did the North.

Data on the stock of money and its components before 1867 are often incomplete and available at irregular intervals. Data on the notes and deposits issued by private banks after the mid-1830s are available in reports the banks made to state government regulatory agencies, which in turn reported them to the Secretary of the Treasury. Considerable data for earlier decades were uncovered by Joseph Van Fenstermaker (1965), who combed government records, newspapers, and other sources for the balance sheets of the banks. Data on the issue of fiat paper money are also available in the Reports of the Secretary of the Treasury. The figures on the amount of coin in circulation are more problematic. Although the amount minted is known, the amount of coin (of domestic or foreign origin) entering or leaving the United States can only be approximated from imprecise and incomplete statistics on foreign trade.

Since the nineteenth century, scholars have attempted to combine estimates of coin, bank notes, and deposits into estimates of the stock of money. The work of Milton Friedman and Anna J. Schwartz (1963, 1970) clarified the conceptual framework for estimating the stock of money. The first effort to apply their framework to the antebellum period was made by George Macesich (1960), who prepared estimates of the stock of specie and the stock of money for the years 1834–1845, and used them to reinterpret the monetary disturbances of the Jacksonian Era. Peter Temin (1969), building on the work of Macesich, prepared estimates covering the years 1820–1858 for his study of the Jacksonian Era. Temin's data are shown in Table Cj22–25. Comprehensive estimates from 1790

of the stock of money and its components were first assembled by Milton Friedman and Anna J. Schwartz (1970). Table Cj7–21 is a version of Friedman and Schwartz's Table 13. It has been simplified for the general reader in several ways: (1) when Friedman and Schwartz give alternative estimates, we present only what appears to us to be the best estimate; (2) when Friedman and Schwartz present data for different months toward the end of the year, we have combined them into a single end-of-year estimate; and (3) we have omitted certain minor monetary variables. Readers engaged in detailed research should consult the original source.

The monetary aggregates presented here are, with the exception of certain figures for the North in the Civil War, simple arithmetic sums of the amount of coins, paper money, and deposits. This is probably the best that can be done for now, but it is unlikely that this method is ideal. If acceptable procedures existed for weighting assets on the basis of their "moneyness," then the weight on coins in the monetary aggregates would be higher than the weight on notes and deposits, and the weight on notes and deposits issued by the First and Second Banks of the United States would be higher than the weight on notes and deposits issued by the state-chartered banks. However, practical systems for assigning the weights are lacking.

During some of the banking panics – there were banking panics in 1819, 1837, 1839, and 1857 – and during the War of 1812 and the Civil War, convertibility of bank notes and deposits into coin was suspended. The price of coin in terms of notes and deposits then became a market price that varied over time. Valuing coin at market prices would produce a larger estimate of the stock of money, and valuing paper at coin prices would produce a smaller estimate, than the arithmetic sum that included coins and notes and deposits all at face value. Economic theory, however, does not provide a clear basis for choosing among these approaches.

The Civil War also created additional problems for interpreting the monetary statistics. The nation was split into several distinct currency areas. In the North and Midwest, the famous greenback dollar, a fiat paper currency, dominated. Gold and silver could be purchased at a premium in the bullion market, but typically gold and silver were not used in domestic transactions. Similarly, in the Confederacy, the Confederate dollar reigned. On the Pacific Coast of the United States, however, gold remained the dominant form of money, and the greenback dollar was treated as a "foreign" currency that circulated at a discount. In part, this odd state of affairs was achieved through social pressure that stigmatized individuals who insisted on paying debts with or otherwise using greenbacks. The South also was split into two currency areas after the North gained control of the Mississippi River. In both the North and the South, moreover, the governments issued interest-bearing notes designed to circulate as money. The extent to which they circulated from hand to hand and whether they should be included in estimates of the stock of money, however, remain controversial topics. Estimates for the South in the Civil War are presented in Tables Eh111–127 and for the North in Table Cj26–41.

Despite all the problems noted in the preceding paragraphs, the monetary statistics from the antebellum and Civil War eras compare favorably in terms of breadth of coverage and accuracy with other sorts of quantitative data from this period. Modern monetary data, it is true, are available more frequently and are based on more comprehensive underlying sources. However, the simpler structure of the financial system during the antebellum and Civil War eras may make the interpretation of the monetary statistics, and the

choice among candidate estimates of the money stock, easier than they are today. In any case, the antebellum and Civil War monetary statistics clearly provide a valuable tool for understanding the early history of the United States and a rich field in which to test the principles of monetary economics.

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## MONETARY POLICY

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"Monetary policy" is commonly interpreted as either the intent or outcome of actions taken by a government authority affecting either the stock of money or the level of interest rates. Under the Employment Act of 1946 and the Full Employment and Balanced Growth Act of 1978, the federal government accepted responsibility for pursuing macroeconomic policies that promote high employment and price level stability. Actions by the Federal Reserve System that affect money or interest rates comprise one form of policy focused on achieving those employment and price level goals.

Monetary policy in this sense is a comparatively recent phenomenon. Traditionally, governments defined their currencies in terms of gold or silver, either minting coin with intrinsic value or offering to convert paper currency or minor coin into bullion at a set price. Currency and deposits issued by commercial banks were similarly backed by the commodity. Changes in the commodity stock, over which governments typically had little control, were thus the principal source of changes in the nation's money stock. Historically, monetary policy consisted of changes in the price at which the government would convert its currency into a commodity, the occasional issuance of unconvertible fiat currency to finance wars, and the manipulation of a central bank discount rate to protect convertibility in a financial crisis. For most countries, however, such actions were rare and not made for the purposes of stabilizing national output or prices.

Government manipulation of money or interest rates to achieve general macroeconomic stability became widely accepted after the Great Depression of the 1930s. To gain such control, governments sought to lessen the constraint that commodity (gold) convertibility imposed on their ability to manipulate monetary conditions. Eventually, commodity backing was completely eliminated, and today no currency of a developed country is convertible into a commodity.

The evolution of monetary policy in the United States was similar to that of other countries. The major turning points in the history of metallic standards may be seen in Table Cj108–112. The Coinage Act of 1792 defined the dollar as the unit of account in terms of coins of a fixed weight in gold or silver. The official bimetallic ratio (silver to gold) was set at 15 : 1. The ratio was changed in 1834 to 16 : 1. That ratio prevailed until silver was officially demonetized in 1900 under the Gold Standard Act. The United States was on the gold standard de facto from 1834 to 1971, save for a period of suspension from 1862 to 1879 during and after the Civil War. The Civil War was partly financed by the issuance of inconvertible greenbacks. At war's end, the government deliberately sought to contract the money supply to restore the original parity of \$20.67 per ounce. This official gold price prevailed from 1834 to 1933. After a transition of several months, the official price of gold was fixed at \$35 per ounce in 1934. On August 15, 1971, President Richard Nixon closed the gold window, thus ending official convertibility of the dollar into gold. In 1973, the government's gold stock was revalued at \$42.22 per ounce, where it has since remained.

The United States had no formal central bank until the establishment of the Federal Reserve System in 1914. Two federal banks, the First and Second Banks of the United States (1791–1811; 1816–1836), however, at times pursued the monetary policy objectives of stabilizing the exchange rate and acting as lender of last resort. Following the Second Bank's demise, the Independent U.S. Treasury (founded in 1847) occasionally engaged in monetary policy by switching deposits from the Treasury to commercial banks, usually to ease financial crises. In the late nineteenth and early twentieth centuries, the Treasury increased its monetary policy activities and in a rudimentary way performed many of the functions of a modern central bank.

Periodic financial crises and general dissatisfaction with the functioning of the payments system led to the establishment of the Federal Reserve System (the "Fed") in 1914. The Fed was created as a quasi-public institution consisting of twelve privately owned reserve banks with an overseeing government board. The reserve banks were designed to serve as bankers' banks, providing check clearing and other payments services, and holding commercial bank reserve accounts. By rediscounting commercial bank loans and issuing currency, the Fed also was intended to be a mechanism by which the nation's stocks of currency and bank reserves could expand and contract to meet changes in demand.

In providing reserves and currency, the Fed's founders intended that the system's operations be consistent with the Real Bills Doctrine and preservation of the gold standard. By basing the extension of Federal Reserve credit (currency and reserves) on the rediscount of short-term, commercial loans (that is, "real bills"), the Fed's founders sought to accommodate the credit and currency needs of a growing economy without supplying excessive funds that might cause financial speculation or inflation. A gold reserve requirement placed on the reserve banks served as a further check on the overextension of Federal Reserve credit. The banks were expected to defend their reserve positions, if they were threatened, by making discount rate adjustments.

The Federal Reserve Act also permitted the reserve banks to purchase Treasury securities, presumably as a source of revenue, and bankers' acceptances, so as to support the growth of an acceptance market. Although the Federal Reserve Act seemed to leave little