

I Colonial America 1620-1776

A Description

British system was based on the pound (\mathcal{L}), shilling (s), and pence (d). The system was one \mathcal{L} was equal to 20s which in turn equaled 240d. The operating instrument was a commodity price target, specifically silver. 1 pound was exchangeable for 3.871 ounces of silver (or 1 ounce of silver costs 0.258 \mathcal{L}). We thus have $P_s = .258$.

The system was similar to a Currency Board today. One could go to the Colonial treasury with 1 ounce of silver and receive 0.258 \mathcal{L} . Similarly, one could bring 0.258 \mathcal{L} to the Colonial treasury and exchange for 1 ounce of silver. Thus, the colonies needed to keep reserves of silver. The supply of high powered money is thus:

$$rr_s H = P^s S \tag{91}$$

Here rr_s is the reserve ratio, or the fraction of high powered money kept in reserve as silver. The quantity of silver reserves is S ounces. Silver was in short supply in the Colonies and reserves were often quite low.

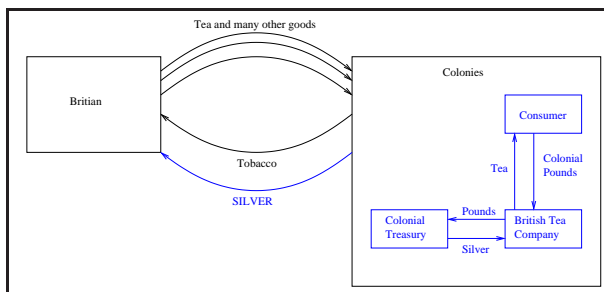
In a typical Currency board, foreign currency is used instead of silver, so the relevant equation is:

$$rrH = \frac{1}{E^*} F_t \tag{92}$$

Here F_t are foreign reserves which can be converted to the domestic currency at rate 1 unit of domestic currency per E^* units of foreign currency. The Central Bank will exchange foreign currency for domestic currency or the reverse at exchange rate E^* . Further, in a currency board, rr is usually set to one, which makes the currency board immune to speculative attacks, since even if every unit of domestic currency were exchanged for foreign currency the country would not run out of reserves. (Exception: if the speculators believe the Central Bank will abandon the currency board all together, then they may still sell domestic currency and buy foreign currency, causing the supply of domestic currency to fall dramatically. If the central bank is then not willing to live with the drastically low money supply, then they may indeed abandon the currency board or lower E^* so that they can issue more currency.

B Trade

Regulations set in Britian forced the Colonies to import many goods. If a good was made in Britian, the colonies were not allowed to have any domestic competitors. Hence a trade deficit developed and the colonies in effect paid for imported goods with silver.



When a trade deficit occurs, the value of the currency sometimes falls. This was not possible here since the exchange rate was effectively fixed, since both Britian and the colonies targeted the same price of silver:

$$1 \text{ Colonial } \mathcal{L} = P^s \text{ ounces of Silver} = 1 \text{ British } \mathcal{L} \quad (93)$$

$$\rightarrow 1 \text{ Colonial } \mathcal{L} = 1 \text{ British } \mathcal{L} \rightarrow E = 1 \quad (94)$$

In fact, Britian designed this system specifically to hoard silver.

MERCANTILISM. Theory that wealth of a nation rested in the quantity of gold and silver. Typically obtained by a favorable balance of trade.

The keys:

- Importers would not accept Colonial currency (only silver).
- Currency link with Britian, so did not initially devalue.
- Hence the money supply must shrink dramatically.

C Devaluation

Bartering was used instead of money early on since money was in short supply. But by 1600, the economy was already too complex for bartering to work.

Recall that $rr_s M^s = P_s S$. Since silver was in short supply, really the only solution for increasing the money supply was to devalue, or increase P_s , which they did.

The hope was to attract silver to the Colonies because they thought it was ‘more valuable’ there. Nutty: prices rose in the Colonies. But devaluation did change the meaning of the shilling as Colonies differed in the degree of devaluation.

Alternative strategy was to issue Bills of Credit.

BILL OF CREDIT. Note from the Colonial government promising to pay silver *later*.

No endorsement was required, and Bills were issued in pound denominations, and made legal tender (although this was not allowed by Britian). Bills of credit then became the common currency as the promise to repay was generally kept.

D Multiple currencies

Everything was fine until the early 1700s when many Colonies greatly increased the supply of Bills of Credit. To do this, the silver standard must eventually be abandoned when the Colony no longer has the ability to pay silver when the Bill is due.

NC and SC departed from the silver standard before 1720. MA, CN, NH, RI departed between 1720 and 1750.

Now essentially a system of two currencies, one fiat (Bill of Credit) and the other the pound which was under the silver standard. Consider a person with two types of currency. Consumer will use the more valuable money for ‘other’ or industrial use, and use the worthless paper for a medium of exchange...UNLESS THERE IS NOT ENOUGH FIAT MONEY. But the supply of Bills of Credit had increased dramatically. Here silver money was used to buy imports, and so the silver money went to England. Fiat Bills of Credit were used as the medium of exchange in the Colonies. After all silver is removed from circulation, the monetary system is fiat and inflation is possible.

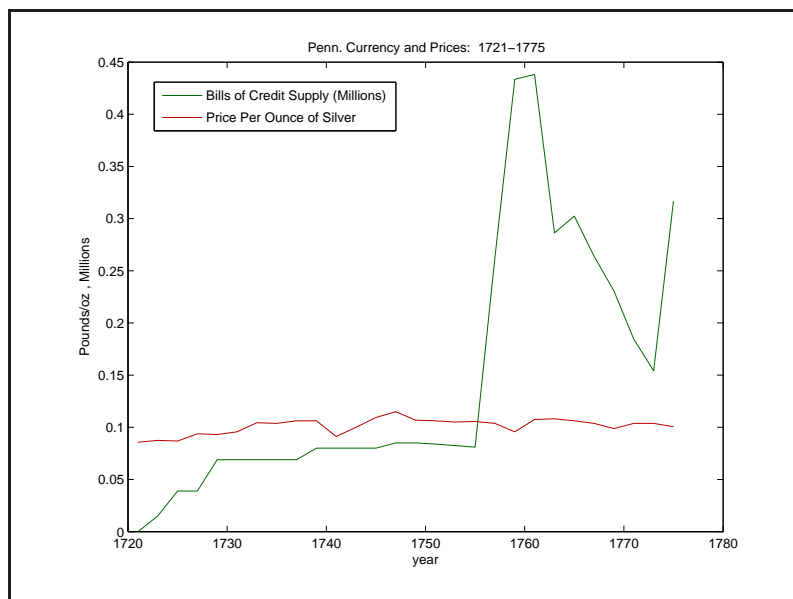
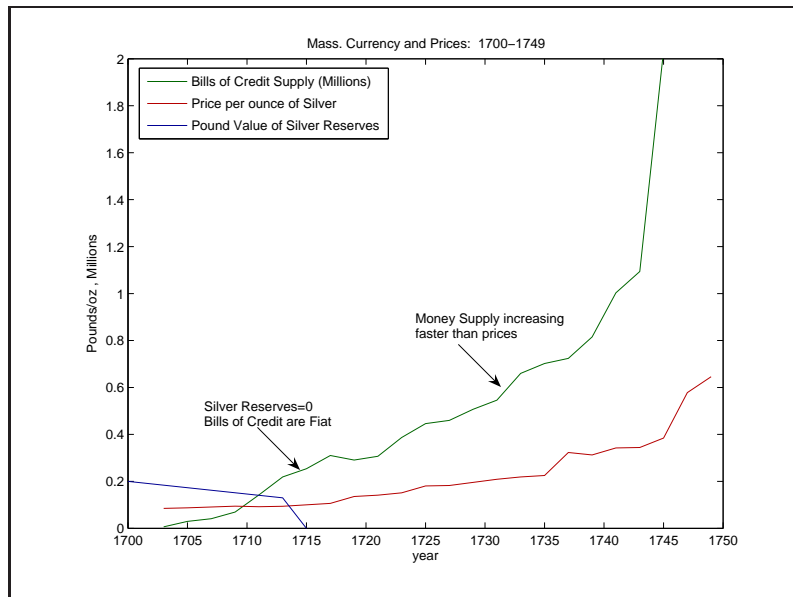
GRESHAM’S LAW. Bad money drives out good.

Likely outcome of the model:

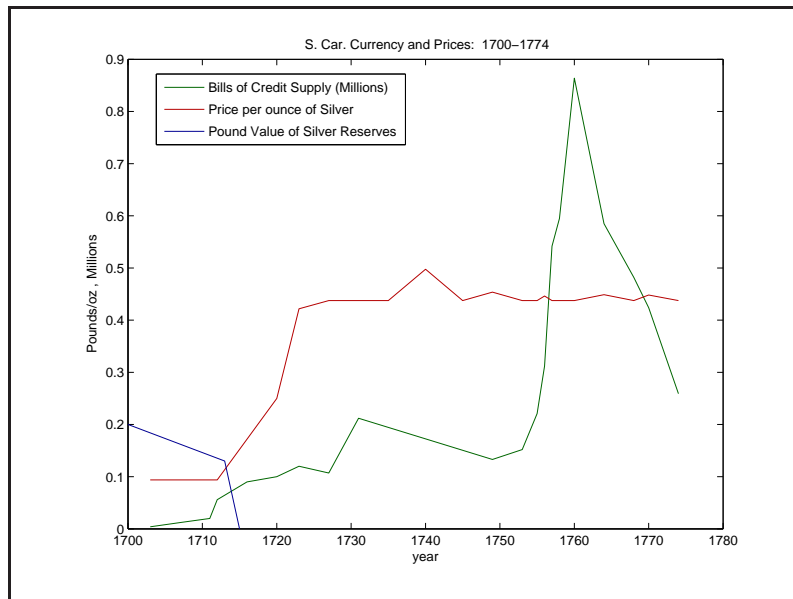
1. Bills of credit become the dominant currency.
2. Inflation is likely after silver standard is abandoned.
3. Nominal exchange rate E must fall.

In fact, this is what occurred. On the graphs below we see the price of silver, bills of credit outstanding, and silver reserves for several colonies. We can see that in MA and SC, silver reserves were exhausted in 1715. At this point, the coloiners could not target a price of silver: they were out of reserves. So the price of silver must vary with market conditions and the supply of Bills of Credit. Further, as the supply of Bills of Credit rise further, inflation results. Inflation is shown here as an increase in the price of silver. Conversely, PA never ran

out of reserves and both Bills of Credit and Pounds continued to circulate throughout the period. Therefore, PA was able to maintain their silver standard. In NY and VA there was also no dramatic increase in Bills of Credit. These states were able to maintain standard and two currencies circulated.



Notice that initially, Bills of Credit were desirable as a medium of exchange, since the alternative was barter. It took some time for inflation to take hold due to the shortage of currency. Overall, issuing Bills was probably a good thing as use of Bills of Credit is better



than a commodity standard when the commodity is in short supply. Indeed, the money supply rose at a generally faster rate than the price level, indicating velocity was decreasing. This occurred because of strong demand for the currency for use as a medium of exchange. In summary:

- Price level is constant if currency is backed by a commodity.
- Bad money drives out good.
- Prices proportional to the M^s under fiat money.

II Revolutionary to Civil War

A Finance of the Revolutionary War

Choices:

1. Taxes. Out of the question in a war over high taxes.
2. Borrow from rich/France. Most rich were loyalists. Also, low probability of being paid back.
3. Use reserves of silver or foreign coins. Had none.
4. Seniorage. The only choice.

Issued Bills of Credit so that M^s increased by a factor of 10. All debts paid with Bills of Credit. Price index rose an astounding 130 times! Thus velocity greatly increased.

$$\frac{M}{P}v = y \tag{95}$$

The real money supply is dropping dramatically. Hence velocity must be increasing. People feared Bills would never be repaid. In fact, government allowed 1/40 of the face value to be used as taxes in 1780-1. Inflationary expectations were therefore too high: hoarding money in 1780 would have paid off. Wrong but not irrational. After 1781, Bills of Credit were not legal tender (“not worth a Conntinental”). Note also, -50% inflation in 1781-2 with no unemployment. Apparently, promise to allow Bills to be used for taxes was viewed as credible.

B US Dollar

1786 adoption of the Constitution changed the monetary standard.

1. One currency: dollar, borrowed from Spain’s peso or piece of eight. Was equal to 4s6d at current exchnage rate.
2. Bi-metal: 371g silver or 24g gold (a ratio of 15:1).
3. Decimal system.
4. Feely exchange gold and silver for dollars (an impure commodity system).

Actual language gave Congress the right to “coin money and regulate the value thereof” and “forbade states to coin money, emit Bills of Credit, or use anything but gold and silver as payment.” Coinage act of 1792 approved 1-4.

C Bi Metal problems

Bi-metal commodity standard implied people could bring gold and silver to mint in Philadelphia and get them minted into coins. Big problem: actual value of silver relative to gold in world markets was 15.5:1. Hence 1g of gold at mint bought about \$.04 or 15g of silver, but on the world market 1g gold bought 15.5g of silver. Hence any gold was first converted to silver on the world market. Hence only silver is minted and the bad money (silver) drives out the good.

Later coinage act of 1834 lowered the value of gold, which became the standard. Also the Gold rush of 1840 further lowered the value of gold.