creation, and private bank credit money creation, at first still in a world of commodity money as base money, and how it is used for prosthetics. We later follow the evolution to a regime of state fiat money as base money and initially examine how prosthetics can be funded by private bank credit money creation in the more abundant world of state fiat money. Ultimately, we shall see that state fiat money creation can fund prosthetic employment-generating spending even independent of private banks. The means of expansive prosthetics, thereby, theoretically, strip off all limitations.

Section 1. Expansive prosthetics funded with commodity money creation

Commodity money creation

In history, the appearance of new commodity money normally enabled new employment-generating spending and greatly pushed production. Had not the Greeks discovered a very rich streak in their silver mine in Laurium right prior thereto, they would likely not have been able to carry out the tremendous productive activity (construction of ports, shipyards, of the trireme fleet, and of weapons), which won them the second Persian war. Europe might be very different then, and we might, of course, not be able to admire the monuments of the classic Greek architectural heritage. Alexander the Great, too, might not have succeeded with his conquests had he not found the Persian kings' silver hoards, which he embossed into money coins.[2] The massive inflow of gold and silver following the Spanish and Portuguese conquests in South America, while it had very mixed results in both Spain and Portugal (the money went into the wealth economy and luxury consumption to a significant degree and caused inflation),[3] after it had travelled to Asia and China, though, helped out the economy of the Ming dynasty there.[4]

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2 Clauss (1993) page 96.

3 *Graeber* (2011) page 309, 311 et seq.; *Bonn* (1896) page 180.

4 Previously, the Ming dynasty, under its first emperor Hung wu, the former rebellion leader of the Red Turbans, for the lack of sufficient gold or silver and, probably more so to procure itself a money creation gland, had attempted to introduce a fiat money system based on non-convertible paper money while suppressing the use of silver and copper. The attempt largely failed. Increasingly, though, silver arrived in China from Potosi via Spain. Between 1540 and 1600 these annual silver imports rose from 40.000 kilograms to at least 150.000 kilograms. The silver was used as un-minted money. See *Heijdra*, The socio-economic development of rural China during the Ming, page 453 et seqs. and *Huang*, The Ming fiscal adminstration, page 148, 149. According to Jacques Gernet, about half of the 400 Millions Silver Dollars imported from South America and Mexico between 1571 and 1821 was used to buy luxury goods in China (*Gernet* (1972) page 47).

The dilemmas of funding prosthetics with commodity money creation

Still, funding prosthetic employment-generating spending through commodity money creation is restricted by the difficulty or almost-impossibility of procuring new commodity money in a planned and controlled way in sufficient volumes at the times when it is needed. State organized campaigns to search for gold or silver were, overall, almost as unsuccessful as state-sponsored or private attempts to artificially produce gold or silver by alchemy. Gold rushes in California, Alaska, Australia, South Africa, and other places were insufficient and uncontrollable too.

Two early related practices in commodity money regimes anticipated fiat money. They consisted in either adding an open seignorage (raising the official nominal embossed value of a gold or silver coin beyond the market value of the precious metal in it) or by secretly reducing the precious metal content of coins, e.g., by adding lead.[5] A third practice was made possible by specifics of the Chinese monetary system. Since the Qu'in, cupper coins with a square hole in the middle were used, and, given the relatively low value of a single coin, it was customary to connect to large numbers by putting a string through their holes, whereby "strings" became the de facto units of payment. In periods of scarcity of cupper, the Sung fiscal administration would now allow the use of "short string" of only 770 coins rather than of normal strings with 1000 coins.[6] But all these methods only worked for a short time. They were resented by markets and led to inflation. Often their quantitative effects were also too limited to make them a powerful instrument of money creation.

It is quite noteworthy that the preceding forms of commodity money creation – finding and mining, debasement and seignorage – operated without any trace of debt being involved. That would all change with merchant credit money creation and fractional reserves credit money creation.

5 The practice of debasement is well known with regard to European princes, but it also already existed in the 2nd century BC in the Chinese Han dynasty, where we witness an oscillation between state monopolies for the minting of the square-holed cupper coins and private minting, and between aggressive an moderate debasement; occasionally, even undebased coins were minted. At the times we also see experiments with state fiat money in the form of deerskin (*Sadao*, The economic and social history of former Han, page 587). The social reformer Wang Mang (9–23 AD), too, resorted to the debasement of coins (*Bielenstein*, Wang Mang, The restoration of the Han dynasty, and later Han, page 232).

6 *Golas*, The Sung fiscal administration, page 208.