Commodity Money

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Review

- In the previous model, I assumed that the initial old were endowed with $M$ units of money

  - but I did not describe its physical properties

- The only reason money could be valued in that economy is for its ability to store information (record-keeping)

  - information (credit history) is intrinsically useless—cannot be used for consumption or production

- Money that serves only this purpose is called *fiat money* (modern and historical meanings differ)
Gold

- What if we interpret $M$ as gold?

- Evidently, gold possesses some intrinsic value

- Can be stored as useless inventory (like fiat money),
  
  - but with \textit{option} of convertibility (both ways, and at some cost) into a service-producing asset (e.g., jewelry, teeth, industrial applications)

  - note: conversion from inventory to service-producing asset seems to render it less liquid (transferable)
• Modeling the production option can be done, but textbook takes a simpler (and less realistic) approach

  – assume that each unit of gold has value in consumption, with consumption-equivalent value equal to \( \alpha \)

  – so option is to consume, but not the other way around (consume = destroy)
Monetary equilibrium

- Recall the competitive monetary equilibrium of our earlier model

- Conditional on $\Pi$, money demand function determined by

$$MRS(y - q, \Pi^{-1}q) = \Pi^{-1}$$

- Market-clearing implies $\Pi = 1/n$; so $q$ determined by $MRS(y - q, nq) = n$

- Which implies $v_t = N_tq/M$
• Assume, for simplicity, that \( n = 1 \) so that \( N_t = N \) for all \( t \)

• Then we have constant price-level \( v = Nq/M \)

• Question: \( v \geq \alpha \) or \( v < \alpha \)?

• If \( v \geq \alpha \), then gold is valued as money and is never consumed

• But if \( v < \alpha \), then consumption value of gold exceeds its exchange value
  
  – indeed, there is an equilibrium in which all gold is consumed by initial old, followed by autarky

• Another possibility is that gold is only consumed to the point where \( v = \alpha \)
The inefficiency of commodity money

• Gold has intrinsic value equal to $\alpha$, fiat money has zero intrinsic value.

• So then why not use fiat money for exchange purposes, and allocate gold to its intrinsically valuable uses?

• The intuition is that with a commodity money system, resources that have intrinsic value are tied up in order to provide a medium of exchange. (CFH textbook)

• Does this intuition hold up if the intrinsic value of gold is modeled more realistically?
Service-producing gold

- Imagine that gold exists in two forms: bullion and jewelry
  - bullion comes in a variety of sizes (denominations)

- Bullion is essentially like fiat money, except that it comes with a valuable option
  - can be converted into jewelry, which produces “glamor services”

- The “inefficiency of commodity money” claim must hinge on the idea that jewelry is not a good form of money
• *But why not?*

• Why is gold jewelry not just viewed as another denomination of gold?

• If it was, then all bullion could be converted into service-producing assets, eliminating the inefficiency of commodity money

• Maybe it’s just easier to assay gold when it exists as bullion? (Alchian, 1977)

• Note: it is not easy for nonspecialists to assay even bullion, which is presumably what led to coinage
Gold bullion
Gold jewelry
Gold coin
Clipping/shaving coin
Roman siliqua (4th century)

- Clipping hinders the benefits of standardization—what does it mean to pay back a debt of (or worth) 3 siliqua?

- Why not just replace with paper or book-entry items? (counterfeiting, identity theft)