

## Money and Coins

Ec 565  
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### Questions

- What is money?
- Was there money before coins?
- When were coins introduced? Where? Why?
- What types of coins? Were they similar to coins before paper money? or to coins today?

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### Unit of account

- Around 2500 BCE during the 3d dynasty (Egypt), the sale document of a house reads :
- "I have purchased this house from the scribe Tjenti. I have given 10 shats for it; a piece of fabric, 3 shats; a bed, 4 chats, a piece of fabric [of a different kind], 3 shats". The scribe answered that "You have completed these payments by installments".
- Barter with a unit of account

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### Mesopotamia

One shekel = 8.4 gr (~ 40 days of work). 1 talent=60 minas=360 shekels

- ~ 2300 BC Sini-Ishtar has bought a slave, Ea-tappi by name, from Ilu-elatti, and Akhia, his son, and has paid **ten shekels of Silver, the price agreed**. Ilu-elatti, and Akhia, his son, will not set up a future claim on the slave. In the presence of Ilu-iqisha, son of Likua; in the presence of Ilu-iqisha, son of Immeru; in the presence of Likulubishtum, son of Appa, the scribe, who sealed it with the seal of the witnesses. The tenth of Ksilimu, the year when Rim-Sin, the king, overcame the hostile enemies.
- ~ 2000 BC Sini-Ishtar, the son of Ilu-eribu, and Apil-Ili, his brother, have bought one third Shar of land with a house constructed, next the house of Sini-Ishtar, and next the house of Minani; one third Shar of arable land next the house of Sini-Ishtar, which fronts on the street; the property of Minani, the son of Migrat-Sin, from Minani, the son of Migrat-Sin. **They have paid four and a half shekels of silver, the price agreed**. Never shall further claim be made, on account of the house of Minani.

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### Money and Memory

- With sufficient memory, coins are not necessary
- Keep track of the transactions
  - That is feasible in a local economy (local store in a village)
- In modern economy with more information, banks keep track of balances. Cash (coins and bills) play a smaller role
- Some people call for the elimination of cash
- Coins facilitate anonymous transactions

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### Remarks on metallic money

- Money is used for *transactions*.
  - We have paper money with no intrinsic value. The value of money is essentially the transaction value. We hold it because we can buy real goods with it. The seller of these goods accepts the paper because he can buy real goods. Etc.... Chain of transactions. If no one at the end, the chain unravels.
- Initially, metallic money because of lack of trust
  - Locally (within the same state, say)
  - Internationally (no overall authority, especially important)
- Two types of transactions
  - International
  - Local

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### Before coins

- Local trade with local accounting
- Long-range trade with precious metals (gold and silver) traded by their weight.
- The evolution of money thereafter will be
  - Local trade with coins traded on their face value (“trade by tale”).
  - Long-range trade with coins traded by coins with “trade by weight”
- Later, after (1100 CE in the Western world),
  - gradual development of the letter of exchange for long-term trade
  - Paper money (18<sup>th</sup> century). Already paper money in China in the 13<sup>th</sup> century.

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### The basis for coins: the constraints of nature

#### Densities and melting points

Metal	Density	Value	Melting point (C°)
Gold	19.32	1,200	1,063
Silver	10.49	100	900-961*
Copper	8.96	0.6	1,085
Lead	11.35	0.05	327.5
Tin	7.28	3.9	232
Iron	7.85	0.2	1150
Bronze	7.4-8.9	1.0	

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### The beginning of coins: Lydia around 600 BC



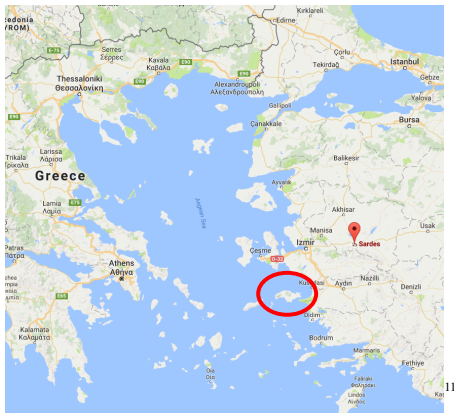
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### Introduction of coins

- Around 660 BC:
  - First coins around what is now Turkey and Greek islands next to it
  - Mix between gold and silver: **electrum**
  - Found in a natural state, especially in a river near the capital of **Lydia: Sardis**
  - Initially, there was no technology to separate the two.
- Next stage: standardization under Croesus, king of Lydia

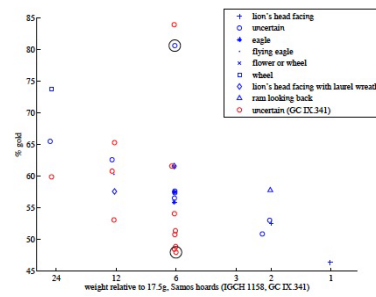
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### Coin minting in Samos

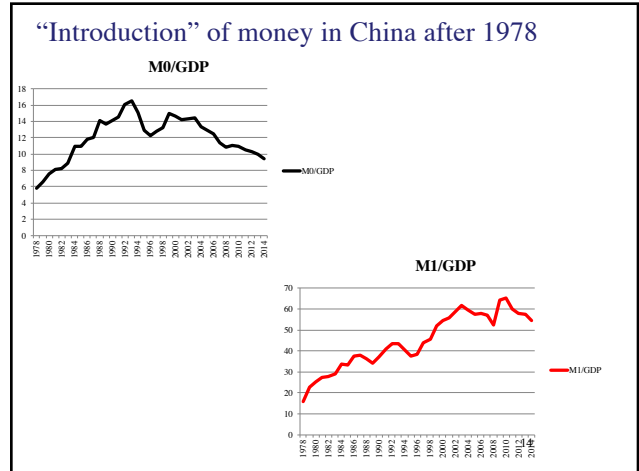
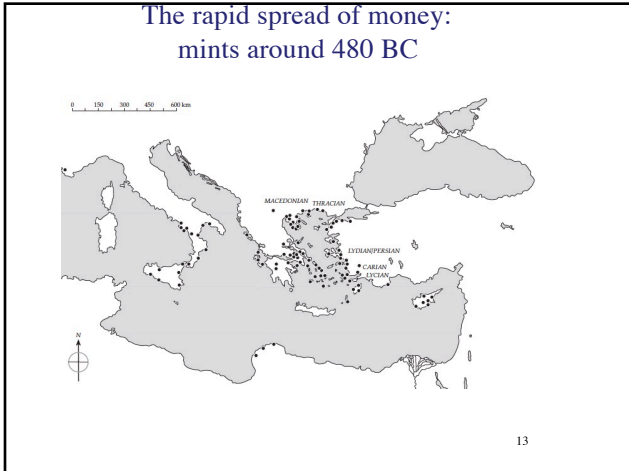


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### Observation: the standard of Samos



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### Roman money

- The basis for any system before the 18<sup>th</sup> century
- Gold and silver
- Any metallic system is constrained by the physical properties of the metals, density and scarcity.
  - **Price ratio:**
    - Roman time, 10-12
    - Now, about 75.
- At equal value, during the Roman empire, a gold coin has a volume 1/20 of a silver coin, hence dimension almost 3 times smaller.


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### Gold and silver coins

- Small value coins cannot be in gold
- Large value coins cannot be in silver
- Hence, bi-metallic system
- In place, theoretically until the 20<sup>th</sup> century
- In Rome:
  - 1 Aureus (gold) = 25 denarius (silver) = 100 sesterces (bronze)
  - 1 Aureus struck at 40-45 to the Roman pound (327 gr), about 8gr (Shekel)
  - Today, 1 ounce (28gr) is about \$1000 (comment), aureus about \$300
  - 1 HS about \$3 (according to the weight in precious metal– comments)
  - Difficulty in comparing developed and underdeveloped economies.



Aureus (19mm)



Sesterterius (36mm)

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