

West meets East: At the Borders of the *Oikoumenē* and Beyond

Lecture 11 – Balancing the scales

CLAH6007

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The Cost of Rome's Indian Ocean Trade

- Attempts to estimate scale of trade – Sidebotham (2011):
 - Muziris Papyrus - 154 Egyptian talents and 2,852 drachmae (almost seven million sesterces) – goods 3.18 tonnes.
 - 120 ships sailing from Myos Hormos (Strabo *Geog.* 2.5.12).
 - 75 ton (68 tonnes) ship capacity – average cargo value of 147 million drachmas.
 - 17.64 billion Egyptian drachmae (equal to 17.64 billion sesterces).
- See estimates for Empire's GDP at 9-20 billion sesterces in the Imperial period (Scheidel and Friesen 2009).

Balance of Trade Debate

- Some argue that the Roman Empire relied heavily on export of gold and silver to pay for its imports, particularly from India.
- Also that either in volume or value, the Roman Empire imported more than it exported, consequently suffering a trade imbalance (particularly with India).
- Did the Romans conceive of a balance of trade?

Mercantilism

- Basic premise that a state should try and ensure as much gold and silver remains within its borders as possible.
“...and we lose those monies only which are made of the over-balance of our general trade, that is to say, that which we spend more in value in foreign wares, than we utter of our own commodities.” – Thomas Mun *England's Treasure by Foreign Trade* (1664).

The Evidence

- *PME* 49, 56 – exchange of Roman gold and silver coins at Barygaza and demand for a great deal of money at Muziris, and Bakarē.
- Sangam literature - Yavanas coming in their great vessels exchanging gold for pepper.
- 6,000 Roman denarii and well over c.1,500 (possibly 10,500) aurei reported from India.
- Not possible to take account of un-coined bullion - debates over state of wear, distribution and patterns of coins within the hoard finds.

Pliny's Figures

“And it will not be amiss to set out the whole of the voyage from Egypt, now that reliable knowledge of it is for the first time accessible. It is an important subject, in view of the fact that **in no year does India absorb less than fifty million sesterces of our empire's wealth, sending back merchandise to be sold with us at a hundred times its prime cost.**” - Pliny *NH* 6.26.101.

“But the title ‘happy’ belongs still more to the Arabian Sea, for from it come the pearls which that country sends us. **And at the lowest reckoning, India, the Seres, and the Arabian peninsula take from our empire 100 million sesterces every year** - this is the sum which our luxuries and our women cost us.” - Pliny *NH* 12.41.84.

- What do these figures represent - seaborne commerce, both overland and seaborne commerce, the pearl trade alone (Warmington 1928)?
- Basis for these figures - tax receipts the government collected at Alexandria after merchant paid the 25% tax (*tetarte*) on imported Indian Ocean goods – (Young 2001)?

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- Pliny's credibility as a source of information? - procurator and closely associated with the court of Vespasian (Miller 1969; Frank 1940; McLaughlin 2010) vs. questionable competence (Raschke 1978).
- Pliny's comments as a moralising *topos*?

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Tacitus *Annals* 3.53

[Speech of Tiberius] For on what am I to make my first effort at prohibition and a retreat to the ancient standard? On the endless expanse of our villas? The numbers — the nations — of our slaves? The weight of our silver and gold? The miracles of bronze and canvas? The promiscuous dress of male and female — **and the specially female extravagance by which, for the sake of jewels, our wealth is transported to alien or hostile countries?**

Can Pliny's figures be used?

- What do they represent? – Do they show a trade deficit (i.e. cost of imports minus the value of exports)? – the amount of money spent in the Empire?
- Does Pliny have the outflow of gold or silver in mind?

“... in no year does India absorb less than fifty million **sesterces** of our empire's wealth...”

“And at the lowest reckoning, India, China, and the Arabian peninsula take from our empire 100 million **sesterces** every year...”

Ruin of the Elite?

- Ruin of many of noble families in Julio-Claudian period - **Tacitus *Annals* 3.55**; those who had been close friends of Nero, despite having received millions of sesterces in gifts, had “squandered” their wealth on “luxuries” and had nothing left - **Tacitus *Histories* 1.20**.
- Expense of gold and silver mirrors adorned with jewels - the spending of patrimony on pearl earrings - **Seneca *NQ* 1.17.8-9, *Ben* 7.9.4**.
- Men frequently were forced into indebtedness due to their wives' luxury - **Juvenal *Satires* 6 Line 509** (also 6 lines 464-660).

Practicality of Coinage Export

- 50 million sesterces = 12.5 million denarii or 500,000 aurei.
- Freshly minted denarius notionally weighed 3.9 grams (g) prior to AD 64, aureus weighed 8g.
- 12.5 million denarii = 48.75 metric tonnes.
- 500,000 aurei = 4 metric tonnes.

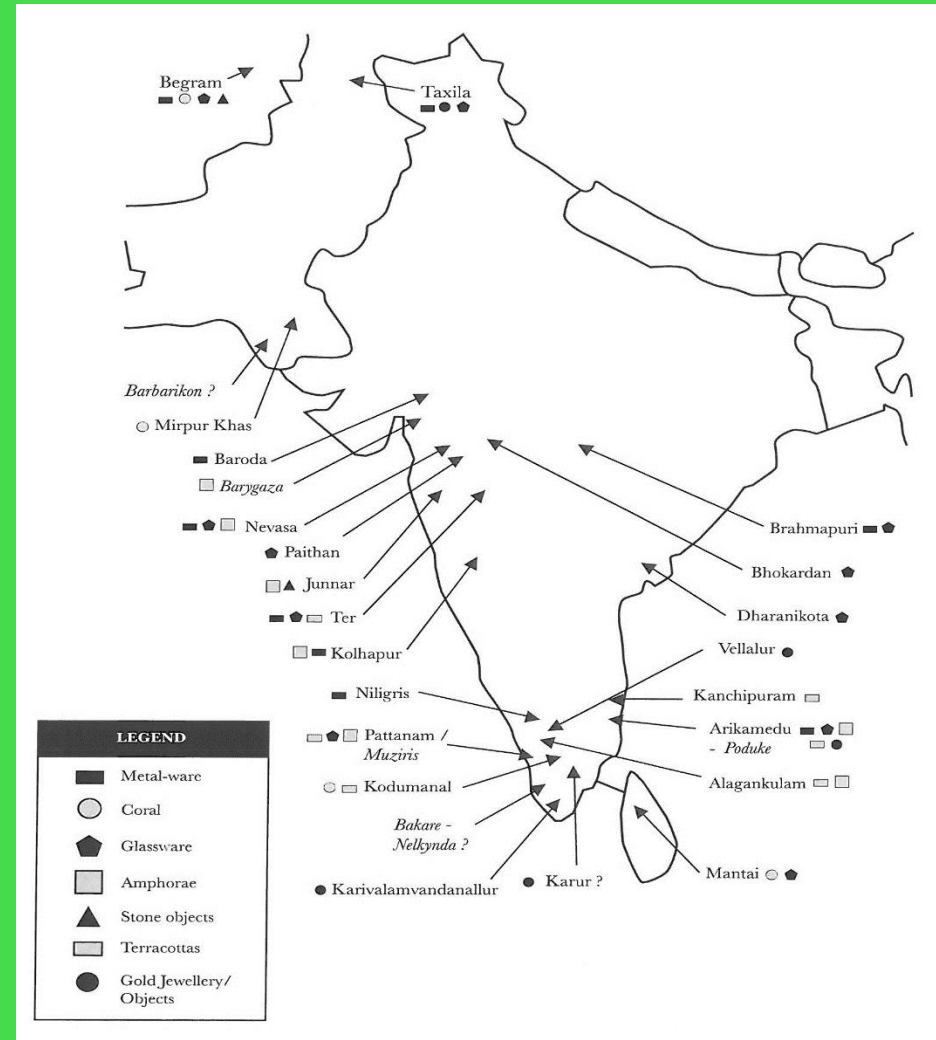
Ship Capacity

- Average ship's capacity in Mediterranean - 68-181 metric tonnes (or 75-200 tons).
- Dimension of Harbour at Berenike suggest larger than average ships.
- Lower cargo capacity (68t) and highest estimate of silver (48.75t).
- 120 ships (Strabo *Geog.* 2.5.12) - lower ship capacity (68t), - upper estimate for the weight of silver - (48.75t), then, on average, only 0.6% space utilised.

Gold and silver equivalents of 50,000,000 sesterces	Ship capacity 68 tonnes 120 ships Average cargo capacity utilised	Ship capacity 181 tonnes 120 ships Average cargo capacity utilised
Denarii (3.9g) – 12,500,000 48.75 tonnes weight (pre-64)	0.6%	0.22%
Denarii (3.4g) – 12,500,000 42.5 tonnes weight (post-64)	0.52%	0.2%
Aurei (8g) – 500,000 4 tonnes weight (pre-64)	0.05%	0.018%
Aurei (7.3g) – 500,000 3.65 tonnes weight (post-64)	0.045%	0.017%

Distribution of Goods

- Were Indians really uninterested in Roman products?
- Distribution of craft-wares across Indian subcontinent.
- Many found in inland sites - well-developed series of overland, riverine and sea-routes used by the indigenous populations of India.



Ballast and Stowage

- Mixed cargoes were the norm in long distance trade.
- Need for ballast, but also for the correct stowage of goods – necessary to ensure stability in strong winds and buoyant conditions.
- If a ship is loaded with materials with a high stowage factor (i.e. low cargo density) it is necessary to compensate by including a consignment of material with a low stowage factor.

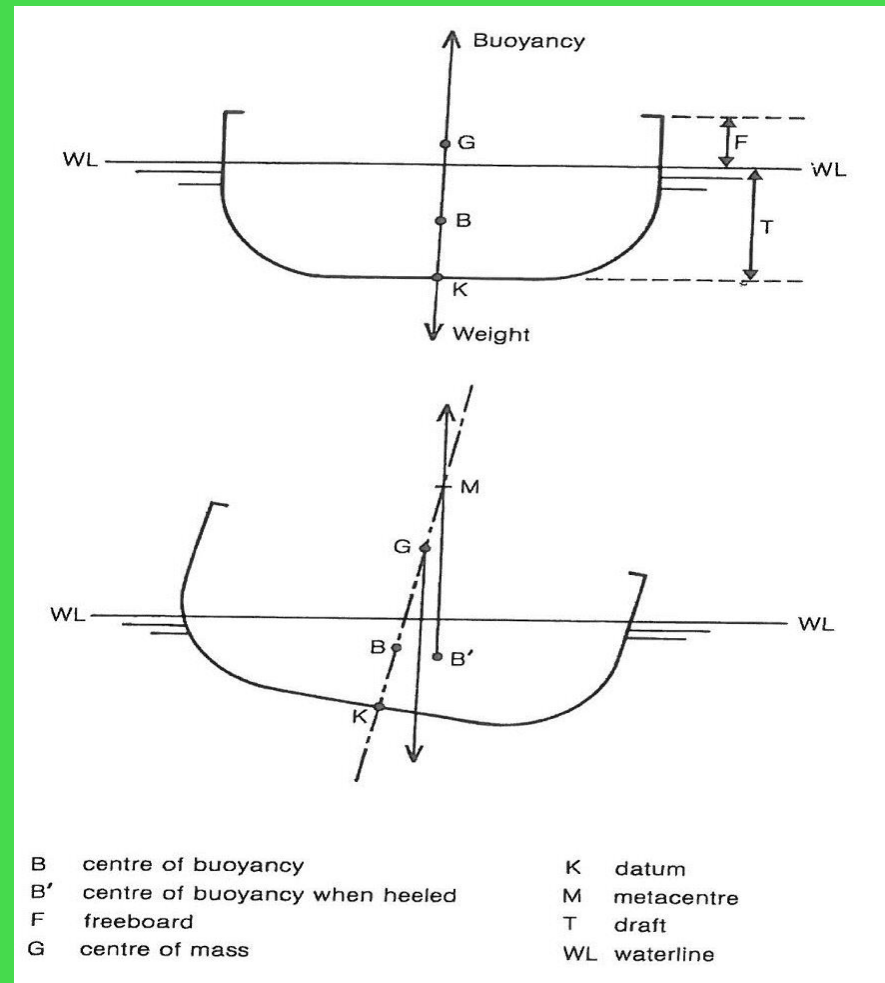


Image from McGrail (1989)

Commodity	Stowage Factors (1m ³ /t) - Lower	Stowage Factors (1m ³ /t) – Higher
Antimony ore/residue	0.34	0.42
Barley (bags)	1.67	1.81
Cinnabar – red ore (bags)	0.5	0.56
Clover	1.39	1.53
Copper	0.28 (ingots) / 0.39 (ore)	0.33 (ingots) / 0.56 (ore)
Coral (bags)	2.23	2.79
Earthenware (crates)	1.7	2.13
Glass-wares (crates)	2.26	3.40
Glass bottles (crates)	2.23	2.79
Hides (dry in bags)	2.09	2.23
Iron	0.28 (pig) / 0.33 (ore)	0.30 (pigs) / 0.42 (ore)
Lead ore	0.28 (ingots) / 0.36 (ore)	0.33 (ingots) / 0.39 (ore)
Olive oil (casks)	1.67	1.73
Silk (boxes)	3.11	3.68
Textiles, fabrics, cloth	1.14 (bales) / 1.51 (boxes)	6.5 (bales) / 7.44 (boxes)
Tin	0.22 (ingots) / 0.5 (ore)	0.28 (ingots) / 0.61 (ore)
Wheat (bags)	1.34	1.5
Wine	1.62 (casks) / 1.67 (cases)	1.78 (casks) / 1.95 (cases)

Effects on the Empire?

- Outflow limited to Julio-Claudian period (argument partially based on coin evidence)?
- Gold and silver mines of Spain and Dacia – Trajan's booty?
- Comparison of coins finds with regions closer to the Empire.
- Most of money spent in the Empire – money distributed mainly among the financiers, merchants and crew, wholesalers, retailers, and the government itself.
- Customs revenue generated at Alexandria vital for the state?

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