

“Of mice and merchants: Trade and growth in the Iron Age”

by Bakker, Maurer, Pischke, & Rauch

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Stylized history

After late Bronze Age collapse (1200 BC), Phoenicians form new trade networks.

Begin sailing open sea (vs. coastal), new long-distance trade (up to 500km).

Levant (dye, wine, pottery), Greece, Egypt (gold), Spain (silver, tin).

Widespread seeding of place names — Cadiz, Malta, Spain, Cartagena.

Ancient Greece develops ca. 750 BC.

City-states, Olympics, alphabet, democracy.

Two big questions

1. Why are cities where they are?
2. Why do cities form (and why do they die)?

Why are cities where they are?

This paper's answer:

Trade
↑
Connectedness
of land pixels within 500 km by sea

→

Development
↓
Archaeological record of settlement
Settlements ca. 750(±) BC

“Connectedness”



“Connectedness”



“Connectedness”



Alternative title: Why was Greece “first” (in 750 BC)?

Why are cities where they are?

I'm convinced that accessibility is an important development factor.

A lot of other (“modern”) evidence, too.

Frankel & Romer 99, Redding & Venables 04

Shocks to trade opportunities

AJR 05 (*1500 AD*), Redding & Sturm 08

Shocks to transport tech

Feyrer 09, Donaldson 18, Donaldson & Hornbeck 16, Pascali 17

Quantitative

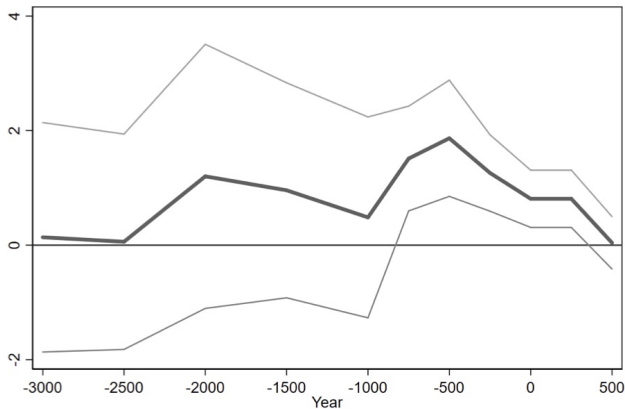
Delventhal 18 (*1000 AD*)

The contribution is the *primordial* nature of the evidence.

Why do cities form and die?

$$Y = \frac{1(\text{settlement}_{it})}{\sum_i 1(\text{settlement}_{it})}$$

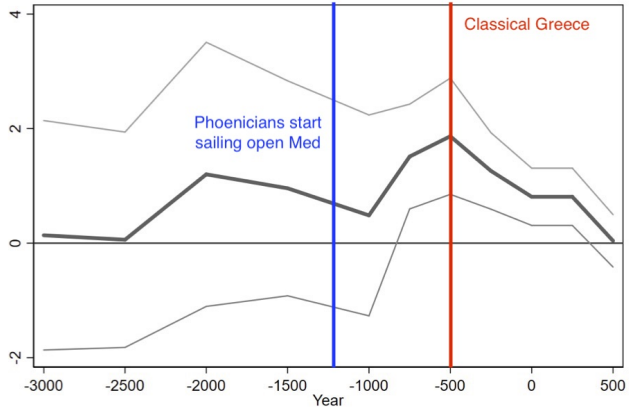
$$X = \log(\text{Connectedness})$$



Why do cities form and die?

Correlation between settlement, connectedness increases in Phoenician period.

Correlation declines between 500 BC and 500 AD to zero.



Interpreting the dynamics

Increase in correlation between settlement, connectedness dates to 2500 BC.

Introduction of sail (*3000 BC*) & rise of trade network, Bronze Age palace cultures.

Cities have been founded on *trade* for a very long time—even before the “Iron Age”.

Interpreting the dynamics

Increase in correlation between settlement, connectedness dates to 2500 BC.

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Decline in correlation between settlement, connectedness between 500 BC–500 AD.

Paper's hypothesis is *saturation*—by 1AD, 48% of pixels have settlements.

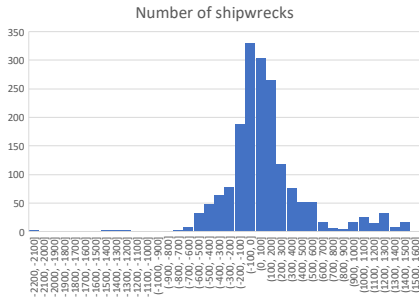
Indeed, new settlements are less connected.

But, connected settlements also less likely to survive (Figure 7).

Why decline in correlation? Ruling out some factors

Trade became *more* important.

Strauss 13 Shipwrecks Database. oxrep.classics.ox.ac.uk/databases/shipwrecks_database/



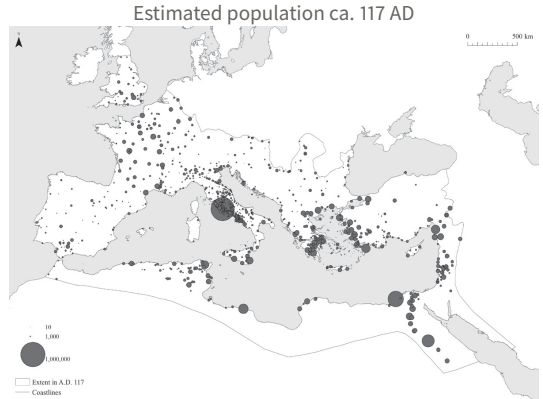
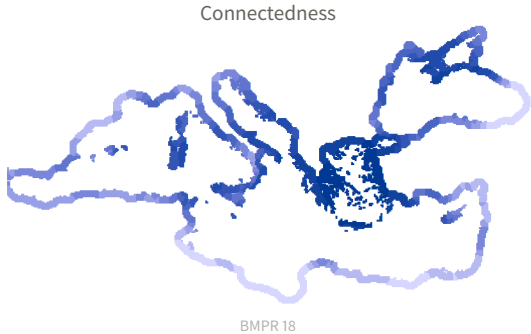
No significant advances in transportation technology.

Gibraltar to Carthage took 7 days in 500 BC *and* 500 AD.

A likelier candidate — growing cities in the Roman Empire

Very large cities — Rome (1M+), Alexandria (500K), Antioch, Carthage, Ephesus (100K+).

Size estimates suggest continued importance of connectedness into late Antiquity.



Hanson 16, <http://oxrep.classics.ox.ac.uk/databases/cities/>

Hanson & Ortman 17

Urban growth shadows?

Still need to account for results on entry and exit.

Roman cities scaled up. Did their growth crowd out nearby connected sites?

In stylized models, “shadow” grows with scale economies, lower t . Krugman 93, Fujita & Mori 97

Given stagnation in t , this may imply strong increase in scale economies...in trade?

Theory and empirics of “agglomeration shadows” is under-developed.

What are (were) relevant concentration, dispersion forces? At what spatial scale?

Summary

I learned a lot about the geography of the Iron Age and Classical Antiquity.

Trade accessibility is (was) central to the formation and location of cities.

Once city network established, connectedness less informative about entry, persistence.