Title:

How Empires and Cities in the Ancient Near East Accelerated Wealth Inequality

Author:

Andrea Squitieri and Mark Altaweel

Publication:

The Ancient Near East Today

Volume/Issue:

Volume 11, Issue 10

Publication Date:

19-October-2023

Editor:

Jessica Nitschke

Keywords:

Wealth, urban growth, inequality, power law, populations, capital movement, disparity, settlement size, empires, migration, transitions, house size, trade, beneficial, wages

How Empires and Cities in the Ancient Near East Accelerated Wealth Inequality

By Andrea Squitieri and Mark Altaweel

The rise and economic development of mostly Western states from the 18thto 20th centuries resulted in increased philosophical, public, and scholarly attention to the rise of wealth accrual in states. This has included understanding how societies became so unequal in wealth or similar metrics, including those related to income, social access, or even general well-being. As scholars of the past, we are often interested in the origin and evolution of many phenomena, including wealth inequality. In our recent work, we are very much embedded in a tradition that has looked at various forms of inequality in the past, but we decided to approach the issue from a new angle. How did cities—in particular urban growth—affect wealth inequality in antiquity?

Recent research has highlighted the historical role cities have played in generating wealth, knowledge, or even infrastructure by investigating the functional relationship between urban population and these phenomena. In general, many different metrics about cities and their populations appear to grow or decline in a power law relationship. We can define power law relationships as changes in one metric, such as population, leading to a proportional change in another metric, such as infrastructure or wealth. This is also called scaling law. Simply stated, as population grows or declines some other observable phenomenon may evolve in a proportional way that can be represented mathematically.

Only a few works have looked at the role of ancient cities and urbanism in relation to their effect on wealth and wealth disparity. We wanted to investigate how ancient urban populations demonstrate power law relationships with wealth specifically. To measure ancient urban populations, we used settlement size, while to measure wealth, we used house size, a metric commonly used by archaeologists as a proxy for overall household wealth (Figure 1).

Figure 1: Sites used in our analysis that had house size data. (Image: Squitieri and Altaweel 2022)

In previous studies, wealth inequality has been analyzed through measures that capture disparity in a population. One of the most common measures is the so-called Gini coefficient, which measures statistical dispersion in data. Typically, values are between 0 and 1 in a Gini coefficient, with 1 indicating complete inequality and 0 reflecting total equality. For example, countries such as the United States have a Gini coefficient of nearly 0.5 in measures for income, indicating a relatively high disparity, in contrast to countries such as Denmark, which is closer to 0.28. There are other inequality measures, such as the Atkinson index, which have been argued to be sometimes better at capturing certain aspects of data distribution and inequality, but these work similarly to the Gini coefficient. We used Gini and Atkinson together to measure disparity in house sizes from published data across the Near East.

In order to capture the role of cities and empires in affecting wealth inequality we divided the data into key periods. We have argued elsewhere that one of the most important social transitions over the last three thousand years is the development of long-lived empires in the Near East starting in the first millennium BCE, which we term as a type of "Age of Empires" (AoE). This period witnessed the succession of large and long-lasting empires in the Near East, such that whenever one empire collapsed another one took its place after a short period. The AoE has enabled major migrations, sometimes forced but also volunteer movements, across wide areas, leading to the formation of large metropolises, changes in urban population composition, more intense and longer distance trade, greater knowledge

transfer, increased common languages, and even religious practices that are still with us today. This transition started around the 8th century BCE, with the consolidation of the Neo-Assyrian Empire, and continued, arguably, into the Ottoman period of the last century.

Inequality indices results	Gini	Atkinson	N. of observations
pre-AoE	0.45	0.16	823
AoE	0.54	0.24	237
Neo-Assyrian/Neo-Babylonian Empires (excluding Assur, Babylonia, and Zincirli)	0.57	0.27	40

Figure 2: Using Gini coefficient and Atkinson index, data available indicate greater disparity in house sizes during the rise of empires in the ancient Near East from around the 8th century BCE.

We divided the house size data and settlement size data across the Near East into two groups: those that preceded the AoE and those that fell within it (Figure 2). This also allowed us to look at the relationships between city size and wealth comparing the pre-AoE with the AoE. What we found is that wealth does have a power law relationship to urban size both before *and* during the AoE. In other words, as cities became larger they were able to draw in more resources, and this may be why larger houses are found in some of the largest sites. Interestingly, the way wealth grew in cities appears similar to how infrastructure has been shown to grow in ancient cities, such as ancient gates or urban street networks. While this power law relationship is true for periods both prior to and during the AoE, we noticed that wealth inequality accelerated in the AoE. In other words, there was a greater growth in inequality in the AoE as cities became larger, where cities appear to have an exacerbating effect on wealth disparity (Figures 3 & 4).

Our result is similar to what has been measured in modern cities, where some of the largest and economically most dynamic cities display various qualities of wealth and inequality. Modern cities are often attractors for wealth, innovation, employment, infrastructure, and other phenomena; we argue that evidence for this is also present in the ancient Near East. Similar to many modern cities, wealth did not only grow but inequality of wealth also accelerated in the AoE.
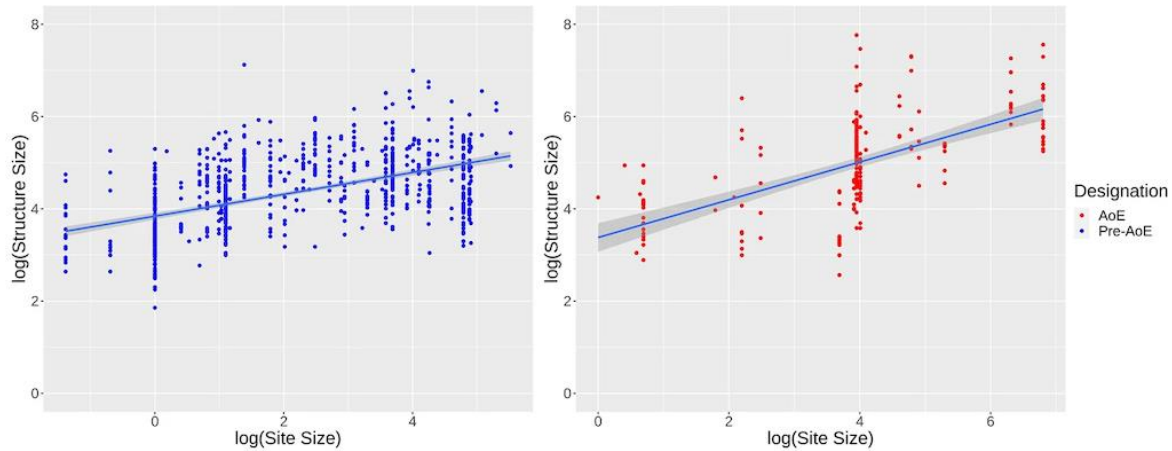
Figure 3 (above): The scaling relationship between house size and city size before the AoE (left) and during (right). Houses in the AoE, shown as red dots, appear to increase in size more rapidly (as indicated by the steepness of the blue line) than house sizes in the pre-AoE. This shows a trend of increasing inequality between cities in the AoE relative to the pre-AoE.
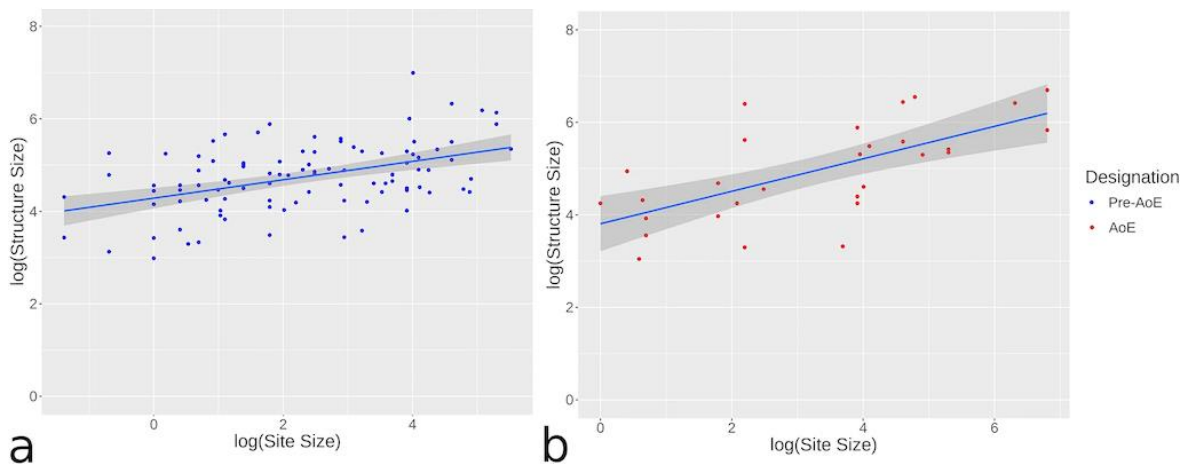

Figure 4 (above): Scaling relationship between settlement size (X-axis) and house size (Y-axis), using median values for house sizes. The acceleration of house size in the AoE is made clear when comparing to site size. Sizes are measured logarithmically.

Why do cities accelerate wealth inequality during the first millennium BCE (i.e., the AoE)? To answer this, we offer some suggestions. As we showed in our previous work, migration and population movement increased substantially in the Near East after the 8th century BCE. This not only meant more people moving, but it also meant that capital and goods began to move more frequently, in greater volume, and from greater distances as it became easier to benefit from the increase in trade and economic interactions. The impact

of this on wealth inequality can be hypothesized through comparison to relevant modern phenomena. Specifically, we suggest that the empires of the ancient Near East have played at times roles similar to free trade agreements (FTAs). In other words, they made it easier to move items and people without much friction or cost between state borders. FTAs have lowered prices for us today and helped many multinational companies to amass great wealth. However, researchers have also argued that they have accelerated inequalities in modern states because not everyone has equal access to capital; FTAs generally benefit those who can best take advantage of frictionless movement of people and goods. This appears to have been similarly true in the ancient Near East, with empires potentially selectively benefiting individuals, who could take advantage of easier population and goods movement evident in the AoE.

Our research mostly aligns with what others have argued more broadly about increasing wealth inequality over time. What we are trying to highlight is the role of long-lived empires in increasing wealth disparity after the 8th century BCE, that is, when such large empires became more common. We believe these empires created larger, multi-ethnic, and economically more dynamic cities that also helped accelerate wealth inequality.

Wealth inequality is a topic that will likely be studied for a long time to come, mainly because it has great relevance for us today as we look at our own world and its various, seemingly increasing disparities. Movement of goods and people, whether it was in the past or recent history, appears to have played an important role in a variety of economic indicators, including costs of goods, wages, inflation, and inequality in wealth. In studying the nature of wealth inequality in antiquity, ideally, other forms of data beyond house sizes should be used, as the dependence on just house sizes may mean that some of our understanding of what wealth inequality was in the past might be skewed or biased. Graves, for instance, could be another form of useful data to collect. What we hope is that in the future more diverse data will be able to provide more detailed and nuanced explanations for why wealth inequality declines or increases in different periods. Such answers may also help us understand our own world better as we search for underlying mechanisms that create inequalities observed.

Andrea Squitieri *is a research assistant in the Department of History at Ludwig-Maximilians-Universität München.*

Mark Altaweel *is Professor of Near East Archaeology and Archaeological Data Science at University College London. Their article* "Empires and the acceleration of wealth inequality in the pre-Islamic Near East: an archaeological approach*", recently appeared in the journal* Archaeological and Anthropological Science.

Further reading

Basri, P. and D. Lawrence. 2020. Wealth inequality in the ancient Near East: A preliminary assessment using Gini coefficients and household size. *Cambridge Archaeological Journal* 30(4): 689–704.

Bettencourt, L.M.A. *et al.* 2007. Growth, innovation, scaling, and the pace of life in cities. *PNAS* 104:7301-7306.

Kohler, T. A. and M.E. Smith, eds. 2018. *Ten Thousand Years of Inequality: The Archaeology of Wealth Differences*. University of Arizona Press.

Piketty, T. 2022. *A Brief History of Equality*. Harvard University Press.

Squitieri, A. and M. Altaweel. 2022. Empires and the acceleration of wealth inequality in the pre-Islamic Near East: an archaeological approach. *Archaeological and Anthropological Science* 14, 190.

Enjoy reading *The Ancient Near East Today*?

Subscribe today and don't ever miss an issue.

You can help us keep *The Ancient Near East Today* free for everyone

by making a donation to ASOR.

No amount is too small!