

# WHY DOES AMPHORA STANDARDIZATION MATTER? THE CASE OF THE 6<sup>TH</sup>-CENTURY BC SHIPWRECK AT PABUÇ BURNU

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## ABSTRACT

Studies in amphora capacities from the 7<sup>th</sup>-century shipwreck at Yassıada reflect a remarkable stage in the development of capacity standards—one at which potters crafted containers to exact linear and volumetric measures. In the economic framework of regulated small- and large-scale market exchange, the enforcement of known standards allows for a reduction of transaction costs, or the price of doing business. The impact of such standardization on the world of trade and economic interaction can be brought into clearer focus with a glimpse at what happens when networks operate without this guarantee: such is the case for the 6<sup>th</sup>-century BC shipwreck at Pabuç Burnu, Turkey.

Capacity analysis of 28 amphoras from the Pabuç Burnu shipwreck suggests a distinct lack of standardization, despite relatively consistent linear dimensions. Certain linear measurements demonstrate sufficient consistency to mark the amphoras as visibly similar in size and type, but variations in the profiles of individual jars result in significant volumetric discrepancies. While the average capacity of the Pabuç Burnu jars falls around 19 liters, a typical consumer might at best expect to receive a jar that fell within a liter or two of this mean. The range of volumetric measurements would appear to deny the possibility that potters were concerned with crafting their amphoras according to a particular capacity standard—local or otherwise. The amphoras' volumes are not internally consistent, nor do they correspond to intervals of known standards: neither Attic, nor Aeginetan, nor Chian choes provide suitable or consistent measurement standards for the sample set.

In the case of market transactions involving unknown or unconnected agents, the lack of capacity standardization of the Pabuç Burnu amphoras may imply some additional stages of measurement in the sequence of interactions from production to transport to consumption. Such operations would have increased the cost and decreased the efficiency of exchange, that is, until the development and enforcement of measurement systems streamlined the commercial process. Conversely, this poor standardization may suggest a realm of economic activity in which the social relationships of individual transactors, a shared ideology of equity in exchange, and a common culture of evaluating particular commodities might have informally effected the same regulatory process that standards ensure for unknown buyers and sellers. Interrelated controls over capacity and quality, then, provide markers for the nature of exchange in the increasingly less embedded economic systems of the rapidly changing Mediterranean world between the 6<sup>th</sup> century BC and the 7<sup>th</sup> century AD.