

Mapping trade, risk and extreme weather in the first globalization: The AveTransRisk database

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Abstract

This research note introduces the award-winning AveTransRisk database, the result of an extensive project capturing data on early modern maritime trade, specifically in the Mediterranean region. It focuses on the concept of General Average, where shipmasters voluntarily sacrificed cargo to save their vessels from peril. General Average procedures, including accident reports and damage calculations, provide valuable information for economic and maritime historians. The AveTransRisk database offers detailed insights into routes, cargo, weather conditions, ships, seafarers and transaction costs. It enables scholars to examine broader topics such as comparative maritime economies, the evolution of legal institutions and risk management. Fully relational and equipped with advanced search functions and mapping capabilities, the database facilitates comprehensive analysis. As it expands to include voyages from other European archives, its usability and resilience increase. Supported by the University of Exeter's digital infrastructure, the AveTransRisk database contributes to the sustainability of digital resources in historical research.

Keywords

AveTransRisk, database, maritime trade, Mediterranean Sea, shipping

The research data supporting this publication are openly available from the University of Exeter's institutional repository at: <http://humanities-research.exeter.ac.uk/avetransrisk>

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Commercial seafaring has always been a risky affair. When a storm loomed or corsairs appeared on the horizon, lives and goods were in danger. In some situations, the threat to the voyage could be so grave that the shipmaster decided to jettison part of the cargo overboard to lighten the ship and save it from peril. This voluntary sacrifice constituted the conceptual basis for an ancient institution that still exists today: General Average. Over time, the scope of the General Average acts increased significantly. The cutting of the mast, running aground, and a whole host of extraordinary damages and costs could be recognized as General Average events. The circumstances leading up to such sacrifices were recorded meticulously, as they could be the basis for litigation between merchants, masters and shipowners about who should bear the economic loss. These records provide the basis for a new, award-winning database that captures a wealth of data on early modern maritime trade, particularly in the Mediterranean basin: the AveTransRisk database.¹

General Average procedures are a rich source of information for economic and maritime historians. A standard procedure consisted of two documents: an accident report known as a 'sea protest' and a calculation for apportioning damages and losses. Accident reports contain all the elements relating to the voyage, often with an abundance of details concerning the route, weather conditions, and accident or accidents that occurred. This document is in the form of a deposition by the shipmaster before the relevant authorities in the first port touched at after the accident, and is often supported by the testimony of members of the crew or of passengers who happened to be on board. The report was sealed and handed over to the shipmaster, who could use it as legal evidence at his port of destination. The calculation estimates the value of the vessel, the cargo and sometimes the freight charge, as well as the damages sustained by the vessel and/or cargo. It also records the administrative expenses involved in handling the case.

The data allows for analysis of maritime trade at an unusually high level of granularity. This includes data on:

- *Routes*, including voyage start and end points, intermediate stops and journey times;
- *Cargo*, including weight, quantity, estimated value, origin and interested merchants;
- *Weather data*, including storms, winds and the presence of ice;
- *Ships*, including tonnage, type and estimated value;
- *Seafarers*, including origin, age and position on board;
- *Transaction costs*, including the cost of certifying procedures and litigating in various ports.

1. The database is among the principal outputs of the European Research Council project of the same name, coordinated by Professor Maria Fusaro (University of Exeter). This project has received funding from the European Research Council under the European Union's Horizon 2020 research and innovation programme (grant agreement number 724544). For the project's website, see <https://www.exeter.ac.uk/research/centres/maritime/research/avetransrisk/>

By collecting Average documentation for the period *circa* 1500 to *circa* 1825, we hope to allow scholars to investigate wide phenomena, such as:

- The relative performance of different maritime economies;
- The history of comparative legal institutions in Europe;
- The development of private and public institutions connected with the evaluation and management of risk, and their role in the ‘little divergence’.

The team that produced the AveTransRisk database has also published a collective volume, as well as several articles and books that can guide scholars who are interested in the topics mentioned above.² Most of the procedures currently uploaded in the database originate from Genoa and Tuscany, where rich serial data is available. Data is also present from Seville in Spain. The AveTransRisk database benefits from external collaborators based at the Notarial Archives in Valletta, Malta, where a rich collection of Average sources from the nineteenth century is currently being digitized as part of a programme of rehabilitation supported by a European Regional Development Fund grant. Other risk management documents have also been uploaded as a separate tranche of data. Lewis Wade, meanwhile, found and uploaded data from the registers of the Parisian *Chambre* (1668–1686) and *Compagnie Générale des Assurances et Grosses Aventures* (1686 to *circa* 1710), two early marine insurance organizations which were concerned, among other things, with losses that were incurred through maritime Average.³ Approximately 4,000 policies from the *Chambre* and 3,400 for the *Compagnie* have been entered into the AveTransRisk database – among the biggest data sets ever produced for early modern insurance institutions. These policies complement more than 2,000 Average procedures from the Genoese, Tuscan and Maltese archives.

The database is fully relational, allowing data to be searched across all fields and tables (vessels, ports, events, Averages). This can be displayed both in the form of tabular data sets and on a map. The online database provides the user with several computational tools:

- *Simple search*: the user can type any word or sentence in this field. The database displays results based on similar spelling in order to cope with non-standardized spelling in the original sources. The search can be refined by filtering the results according to specific tables (damages, events, sources and so on). This function could be used, for instance, to search for a specific merchant or cargo.

2. Maria Fusaro, Andrea Addobbati and Luisa Piccinno, eds., *General Average and Risk Management in Medieval and Early Modern Maritime Business* (London, 2023); Gijs Dreijer, *The Power and Pains of Polysemy: Maritime Trade, Averages, and Institutional Development in the Low Countries (15th–16th Centuries)* (Leiden, 2023); Jake Dyble, ‘General Average in the Free Port of Livorno, 1600–1700’ (Unpublished PhD thesis, University of Exeter and University of Pisa, 2021); Lewis Wade, *Privilege, Economy and State in Old Regime France: Marine Insurance, War and the Atlantic Empire under Louis XIV* (Woodbridge, forthcoming). For the full list of publications related to the project, see <https://www.exeter.ac.uk/research/centres/maritime/research/avetransrisk/publications/>

3. Wade, *Privilege*.

- *Advanced search*: this is the core search function of the database. It allows customized searches on any parameter entered. Users can build their own personalized queries by combining ‘text fields’ (a word or phrase to be searched for) and ‘choice fields’ (predefined lists of options). The results of advanced searches can be printed or downloaded as Excel files and in other formats to facilitate further analysis. This is the best tool for multifactor searches.
- *Map of ports*: this mapping function allows the user to create captivating visual representations of the ports contained within the data set. The results can be filtered to include only specific sources and time spans or to choose ports based on their role in the voyages (for example, unscheduled stops can be excluded or only ports that were the beginning or end of a voyage can be displayed). Since the exact routes followed by the vessels cannot be safely determined, these are not represented on the map, which focuses only on the ports and accident locations mentioned in the reports.
- *Map of events*: this mapping function allows the user to map and filter events extrapolated from Average reports based on their typology (storm, hostile encounter, jettison, theft of merchandise and so on).

Since the data populating the AveTransRisk database comes from different archival documents drawn up according to differing local conventions, a constant concern was to make sure that the data is accurately and cleanly collected and uploaded. We standardized dates according to the Gregorian calendar and converted known currencies – mostly Genoese *lire*, Tuscan *scudi* and Spanish pieces of eight – into their silver equivalent.

The AveTransRisk team have been in constant dialogue with the teams behind other historical databases, such as PORTIC and Risky Business.⁴ Our final aim is to have a data set that can be integrated with other data sets to increase usability and resilience. The issue of ‘digital archives’ and their sustainability is a challenge of which we are aware. At present, a common policy on the technical infrastructure required for ‘retrospective compatibility’ is lacking. Many digital humanities projects die with the end of funding, and very few institutions have yet found acceptable solutions. Fortunately, the AveTransRisk database is hosted by the digital infrastructure provided by the University of Exeter, and the database can therefore keep growing thanks to the above-mentioned collaborations and the activities of former team members.

Over time, the AveTransRisk database will incorporate voyages from other European archives. Similar General Average documentation is available for early modern Venice, Naples, Dubrovnik, Marseille, Barcelona and Amsterdam, and possibly other centres too. Maritime Averages have proved to be a rich seam of data for maritime and economic historians, and their usefulness can only increase as more comparable documentation is made accessible.

4. For PORTIC, see <https://anr.portic.fr/en/home/>. The Risky Business database of marine insurance prices and routes is presented in Sabine Go et al.’s Research Note in this issue of the *International Journal of Maritime History*.


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