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Measuring Maritime Trade

An Introduction to the AveTransRisk Database

Mesurer le commerce maritime à partir des procédures d'avarie. Une introduction à la base de données AveTransRisk

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Measuring Maritime Trade
An Introduction to the *AveTransRisk* Database

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& Lewis Wade ***

Abstract. This article introduces the *AveTransRisk* database, which contains the data present in the documents produced as part of a General Average (GA) case. This documentation is an important quantitative source for the early modern period. The mutualistic nature of GA makes this data particularly useful for economic historians looking for stable and reliable historical commodity prices and costs, because all parties involved in GAs were active participants in the business venture so "over-" or "under-" estimation of commodity values and expenses was unlikely.

Keywords. maritime trade, equitable apportioning, sea protests, commodity prices, transaction costs

Résumé. Mesurer le commerce maritime à partir des procédures d'avarie. Une introduction à la base de données *AveTransRisk*. Cet article présente *AveTransRisk*, base de données constituée à partir d'informations collectées dans le cadre des procédures d'avarie grosse/commune. Cette documentation représente une source quantitative importante pour le début de la période moderne. La nature mutualiste des avaries communes rend ces données particulièrement utiles pour les historiens économiques à la recherche d'informations sur les prix des produits et les coûts liés aux opérations maritimes du passé. Ces données sont solides et fiables, car toutes les parties impliquées dans les procédures d'avarie participaient directement à l'entreprise commerciale, de sorte qu'une surestimation ou une sous-estimation des montants des produits et des dépenses reste peu probable.

Mots-clés. commerce maritime, répartition équitable, protêts maritimes, prix des produits, coûts de transaction

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General Average (GA) is possibly the oldest legal instrument underpinning maritime trade. Under its contemporary definition – enshrined in the 2016 version of the York-Antwerp rules that regulates it – "there is a general average act when, and only when, any extraordinary sacrifice or expenditure is *intentionally* and reasonably made or incurred for the common safety for the purpose of preserving from peril the property involved in a common maritime adventure".[1]

The following two articles present the *AveTransRisk* database, which was designed to capture the quantitative data contained in early modern GA cases, and is one of the major outputs of the project "Average-Transaction Costs and Risk Management during the First Globalization – Sixteenth-Eighteenth Centuries" (AveTransRisk). The database is the result of a real team effort, and received the Digital Innovation Prize (*ex-æquo*) awarded by the Association française d'histoire économique (AFHE) at the World Economic History Congress in July 2022.[2] It was originally designed to contain the material preserved in the archives of Genoa and Tuscany (Pisa and Livorno). When the French and Iberian data were investigated, we discovered that, while containing comparable data, they were structured differently. Further technical details on the principles behind the design are provided in the companion article by Antonio Iodice, Jake Dyble and Ian Wellaway.

1. On General Average

The "AveTransRisk" project focused on a family of legal procedures that still regulate global trade today: maritime Averages.[3] Their continuing relevance was demonstrated by the recent case of the ship *Ever Given*, which became stuck in the Suez Canal: the insurers of ship and cargo are negotiating a GA claim worth more than half-a-billion dollars.[4]

1. The research for this article was conducted thanks to funding from the European Research Council: ERC Grant agreement No. 724544 "AveTransRisk-Average-Transaction Costs and Risk Management during the First Globalization (Sixteenth-Eighteenth Centuries)". Maria Fusaro contributed the text at parts 1, 2, 3, first paragraph and the conclusion; Marta García Garralón contributed the text at part 4 and first paragraph; Lewis Wade contributed the text at part 5. The text was checked, modified, edited, and approved by all contributors.

2. URL: https://www.wehc2022.org/news/prize-winners, accessed 10 September 2023.

3. A volume of collected essays produced by the "AveTransRisk" project represents the state of the art on Averages: M. Fusaro, A. Addobbati & L. Piccinno, 2023. The full list of all other publications arising out of "AveTransRisk" can be found online (URL: https://www.exeter.ac.uk/research/centres/maritime/research/avetransrisk/publications/, accessed 10 September 2023).

4. URL: https://www.insurancejournal.com/news/international/2021/07/07/621607.htm, accessed 7 October 2022.

The varieties of Averages are (and have been) many. "AveTransRisk" looked at them all in a historical lens but focused in particular on the most common: General Average (GA). General Average is based on a relatively simple principle – deliberate sacrifice for common benefit – that leads to equitable apportioning between all stakeholders. The apportioning itself is a complex technical financial instrument that requires considerable effort to be properly interpreted. Analysed in isolation, the apportioning provides results with only local relevance. However, since they are eminently transnational and trans-jurisdictional documents, GAs are ideally suited for comparative analysis.

The standard Average procedures documented in the database required that, after the event leading to the expense/damage, the shipmaster would stop at the nearest port and file an accident report, which in English is called a "sea protest".[5] Written by the shipmaster, this provided a detailed narrative of the event, and of the measures taken by the master and crew to limit damages. These reports always provided data on the ship's name and typology, the master's name and place of origin; the route of the ship (origin and destination, but also stopovers); the cargo description; the length of the journey; a narrative of the "event" and the list of the extraordinary costs or damages sustained. The relevant port authorities then interviewed witnesses from aboard the ship to corroborate the report. These witnesses were generally chosen to cover a variety of different social/hierarchical groups on board, an interesting element to ensure "objectivity" and try to limit fraud.

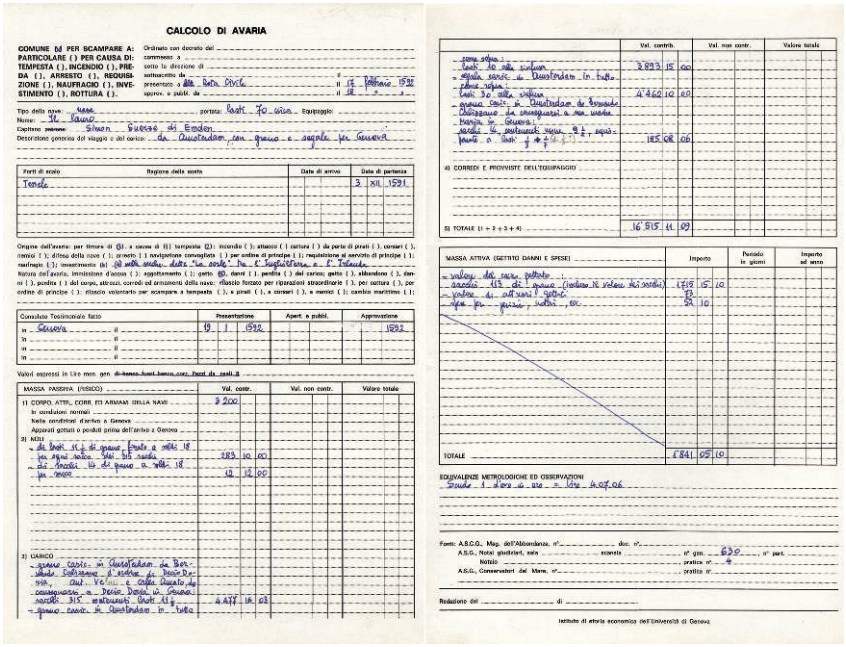
The report was then formalised by local authorities, and a copy was given to the master so that he could present it to the relevant authorities, usually at the ship's home port or at another port of call. This meant that the probative document was frequently drawn up in one jurisdiction and then used to start the procedure in another. This was followed by the second part of the procedure, the so-called "adjustment" or redistribution of costs. Not all original reports resulted in a proper GA, as some were filed as a preventive measure by masters. When the initial report resulted in a proper Average procedure, further quantitative data was recorded: the value of the ship and cargo (often the bill of lading is enclosed), and details on the freight contract. On the basis of these data, expenses were then apportioned to shipowner/s and merchants, through a complex series of calculations that were validated by the relevant magistracy before payments were made. Further details on how these complexities are reflected in the database are discussed in the companion article.

5. This specific document can be referred to in a variety of ways. For sake of clarity, this article subsumes them all under the general name of "report". For a detailed discussion of the other variants see M. Fusaro, A. Addobbati & L. Piccinno, 2023.

2. Database origins and principles

The database has its roots in the paper cards designed by Giuseppe Felloni in the 1980s. He pioneered the study of Averages, which he used as a proxy for evaluating the volume of trade passing through the port of Genoa. His own research interests then moved to the Banco di San Giorgio, so he bequeathed his cards to the Department of Economics hoping that other scholars would pick up the baton.[6]

Figure 1. *Giuseppe Felloni's paper cards for the study of Averages*



Felloni's paper cards (Figure 1) were designed around a printed template in which the essential data of each GA case was manually inserted. Their format changed over time, and there was no precise protocol for data collection, with the results that the paper cards display varying levels of analytical

6. For a full bibliography of Giuseppe Felloni, and access to his writings, see his website (URL: https://www.giuseppefelloni.com/en/publications.php, accessed 8 September 2022).

precision and many inconsistencies.[7] Furthermore, the data contained in the cards is directly related to his interest in the analysis of the flow of traffic passing thought the port of Genoa, so the cards report the quantitative data present in the apportioning document (*calculus*), but they neglect the other data contained in the reports.[8]

As inspiring as the cards were, it was obvious that we needed to apply far more robust criteria in the data collection, to make it both complete and usable by scholars with different interests from ours. The key principle behind the data collection has been absolute respect for the nature of the primary evidence. Before even approaching the archival data, a number of strategic decisions were taken. These were the guiding principles that informed the construction of the database. The first was completeness: it was decided that all quantitative data provided by the original documents should be captured: since it may be several decades (if ever) before scholars decide to seriously re-examine these records, it was important that their full potential be realised the first time around. This would also ensure the longevity and sustainability of the database, as future scholars making use of GA records would be able to add to the dataset regardless of whether their own interests were restricted to seamen's lives, maritime trade, or meteorological data.

The other cardinal rule we followed was data cleanliness, i.e. baking as few historiographical assumptions into the data collection process as possible. Again, this would ensure the useability of the data for other projects. An example of this principle in action concerns the question of scheduled and unscheduled stops. A ship might have put in at a port unexpectedly to take shelter or in order to draw up a sea protest. Without further detail, a future researcher making use of the online database might mistakenly include this stop in a statistical analysis on port traffic and trade flows, when in fact no goods had been destined for the emergency stop. Within the data for Genoa and Livorno, for example, emergency, or "forced" stops amounted to 1,033 extra port visits across 687 voyages out of all voyages in both datasets, or an extra 1.5 stops per voyage. It therefore became necessary to include an additional entry field, "reason for stop", so that a researcher not interested in emergency stops could filter this information out. Other similar problems, and the solutions we envisaged, are discussed in the companion article.

The database thus provides a wide and uniform coverage of the data present in the original documentation.[9] A detailed description of the event/s

7. The most complete cards are those for the years 1599-1601 and 1724-1730. The 1599-1601 data was the basis of his analysis in G. Felloni, 1978.

8. Before publication in the database, all the information contained in the paper cards was checked against the original documents, eventual mistakes corrected, and further data from the original documentation were added to achieve a uniform coverage.

9. For a detailed description of the differences between the paper cards and the database see A. Iodice & L. Piccinno, 2023.

that caused the GA is provided, frequently with a (partial) transcription of the original report and direct links to the image of the original document.[10] Accurate dating of the events at the origins of the GAs cases was a focus of particular attention and there is a function that allows for a precise geolocalisation of the event/accident, allowing users to generate personalised maps. We also created a separate section, where the presence of miscellaneous documents added to the procedure – such as bills of lading, litigation, memoranda – can be recorded with the aim of allowing researchers to easily retrieve material from the archives corresponding to their own specific research interests.[11]

3. The peculiarities of GA data

All the documentary evidence listed above provides a wealth of quantitative data about early modern maritime trade, which are almost impossible to collect otherwise. We have some limited – superficially "comparable" – data coming out of insurance claims. But this is a very rare type of primary evidence that has not survived in any consistent way for the pre-modern period. A major problem with the data from insurance policies is that, following the development of insurance "markets", they became instruments for speculation. This negatively impacts the reliability of their data. Another problem is that quantitative data about insurance retrieved from the archives is frequently connected with litigation. This is problematic as the data provided concerns disagreements amongst the partners, and are therefore contested by some of them, which affects their reliability. The French datasets, presented later in this article by Lewis Wade, draw on rare insurance registers that allow for a detailed analysis of insurance practices in a formative period of Louis XIV's reign. Nevertheless, these do not offer any notable pricing data for commodities; this is where the GA data distinguishes itself.

GAs are structurally and substantially different from insurance as they have remained a strictly mutualistic form of protection. Their quantitative data is particularly useful for economic historians looking for stable and reliable historical commodity prices and costs, because all parties involved in GAs were active participants in the business venture, each with substantially different interests. "Over-" or "under-" estimation of commodity values and expenses would affect all parties, and was therefore unlikely. These issues are further discussed in the companion article dedicated to the Genoa and Livorno data.

10. This function is available, but its current usage is limited by issues related to copyright, which varies between different archives.

11. For more technical details on database design and content see J. Dyble, A. Iodice & I. Wellaway, 2023, in this issue.

This type of data, and the possibility of integrating qualitative and quantitative data, allows us to analyse the financial structure underpinning maritime trade during these centuries, the global spread of European legal institutions during the early modern period, and the relationship between GA and insurance on the global scale. Furthermore, it provides granular details about individual business firms specialised in maritime trade and transport, so it will hopefully be useful also for business historians. In a recent stimulating essay, Mallory Hope demonstrated the limits of the traditional usage of insurance data simply as a "quantitative deep well" and argued for the need to integrate qualitative and quantitative data.[12] This integration of quantitative and qualitative elements was at the heart of our database and directed all our choices in its design.

But there is a lot more potential in the *AveTransRisk* database. In addition to the value of the "damages" proper – such the cargo and ships' armament (masts, ropes, boats...) – all manner of other values emerge from GA reports. These are figures related to "transaction costs", for example, the expenses of hiring porters for unloading the ship, or the administrative costs associated with premodern bureaucracy.[13] This data gives economic historians an exceptional window into the effective value of transaction costs, an essential element that is typically very difficult to find in pre-modern archival evidence. The nature of GA primary evidence allows us to overcome a classic challenge in analysing pre-modern economies: in the words of Quentin Van Doosselaere, the fact that "costs are hard to measure and are not uniform with respect to social settings".[14] In other words, individuals' exposure to transaction costs varied according to their social status, which might provide them with exemptions and rebates on customs and duties. GA data has no such embedded bias, and we do hope that many scholars will take advantage of their potential, develop new ways to make use of the database, and ideally improve it further.

To further develop the "potential" of the database, we decided to include not just the data from Tuscan and Genoese archives, but also the idiosyncratic evidence that emerged from the French and Iberian archives. As discussed by Ian Wellaway in the companion article, these issues are behind our decision to develop specific versions of the offline Access Database tailored to each of the archives under investigation, and to keep the different regions separate in the online public-facing database.

After scoping several Iberian archives for GA evidence, Marta García Garralón decided to focus her research on the material extant in the Casa de la Contratación in Seville. The peculiarities of the Carrera da India – with large convoys and hundreds of different merchants involved – meant that the

12. M. Hope, 2023.
13. N. S. B. Gras, 1953, p. 76.
14. Q. Van Doosselaere, 2012, p. 6.

cases detailed there are exceedingly long and complex, and very similar to contemporary practices concerning GA. The surviving evidence is concerned not with standard GA procedures, however, but with the associated litigation, so the material needed to be treated carefully in light of the problems associated with this type of evidence. The case study she presents in this article has been chosen specifically as an extreme illustration of the complexity of the sources, and hence of the choices that were made to transpose the 600 + pages of a massive court case into something that would fit into the database and provide reliable data. It was thus decided to focus on three specific types of documents, those also used for the other regions analysed. The first is the original report produced by the ship master, the second is the sentence of the court of the Real Audiencia de la Contratación whereby that specific case was declared to fall under the General Average rubric, and the third document is the final apportionment itself, the final version of which was approved by the Casa. We therefore excluded all documents concerned with the parties' alternative versions of events, other types of damages not recognised to fall under GA, and all the additional material connected to other elements of the trial itself. The massive size of these cases has slowed down the insertion of Spanish cases into the database; more cases will be added in the future.[15]

The French evidence turned out to be rather different from what was originally envisaged. Lewis Wade will explain how this is effectively a self-contained mini database of its own that uses the same structure and interface of the main datasets.

To explain these differences in the data, all the regions have been kept separate in the online database, and have been provided with individual introductions to their data and its peculiarities.

4. A General Average case in the Carrera de Indias

The case of the ship *Nuestra Señora del Rosario* well illustrates the complexity of General Average (GA) in the Atlantic route between San Juan de Ulúa (Veracruz) and Seville, one of the main routes of the Carrera de Indias, the maritime path that connected the Iberian Peninsula with colonial possessions in the Americas. The ship suffered several unforeseen events on the journey back to Spain in 1594. Once in Seville, the *maestre*[16] filed a claim

15. Further details on these issues in M. García Garralón, 2023.

16. Within the Carrera de Indias, the specific post of *maestre* covered many more responsibilities than that of master, for further details see: https://humanities.exeter.ac.uk/media/level1/academicserviceswebsite/it/documents/avetransrisk/RolesOnBoardSpanishShips.pdf.

for GA before the Royal Court of the Casa de la Contratación.[17] Analysing the sacrifices and expenses incurred by the *maestre* Cristobal Coello, as well as their fit within GA Atlantic practices, sheds light on transaction costs and on the maritime practices and customs operating in the Carrera.

The extraordinary variety of accidents that occurred in the Spanish Atlantic waters requires us to classify these risk situations, and to study the different systems of apportionment of damages and expenses between merchants and shipowners implemented after the voyage. The *AveTransRisk* database provides a versatile tool for historians and for researchers of various disciplines, by combining historical, geographical and climatological information. The procedural debates reflecting the interests of the parties, as well as the discussion as to who should bear the costs arising from these unforeseen events, reveals the application of a mutual system of protection for handling shipping risks. The conditions to be met for declaring a GA are that the sacrifices made on the cargo or the ship must have been *deliberate* and that their consequences must have generated a *common benefit*. Likewise, the expenses must have been incurred for the benefit of all parties involved in the maritime venture.

The various GAs incurred during the voyage of the *Nuestra Señora del Rosario* were presented before the Real Audiencia de la Casa de la Contratación in Seville. These included several claims: 1) expenses for loading and unloading, a second refitting (careening) of the ship, storage and labour on goods, all as a result of a forced wintering of the ship in the Caribbean; 2) merchandise loading and unloading expenses following seizure of the ship to join the army that accompanied the fleet; 3) jettison of cargo and ship's belongings, and cutting of ship's gear due to a storm; 4) an extraordinary bonus payment of 3,200 ducats to the sailors and soldiers on board so that they would not abandon ship.

Among the different GAs, one of the most frequent in the Carrera was the transfer of cargo from one ship to another. This was usually ordered after the ship was found to be in poor condition and unfit to sail. Jettison was also frequent in Atlantic journeys and was generally accompanied by damages on the cargo — the latter considered instead as Particular Average.

In 1594 the *maestre* and shipowner, Cristobal Coello, left San Juan de Ulúa (the port of Veracruz) with his ship *Nuestra Señora del Rosario* for the port of Havana, the first leg on his return voyage to Seville.[18] The

17. Archivo General de Indias (henceforth AGI), Seville, Contratación, leg. 740, no. 1: Proceeding between Cristóbal Coello, shipowner and maestre, and interested parties (1595). In the database this voyage ID is 70021.

18. Details of Marcos Aramburu's *Nueva España* fleet sailing from San Juan de Ulúa to Havana and the gathering of the various fleets and navies in the Caribbean can be consulted at AGI, Patronato, 254, no. 3, G.3, R.2: *Relación del viaje de la armada que llevó*

ship travelled in convoy, as part of the Nueva España fleet commanded by Captain General Marcos Aramburu. In its hold, it carried a valuable cargo of cochineal, hides, indigo, silk, silver and other merchandise.[19] In Havana, the fleet dropped anchor to await the arrival of Francisco Coloma (the General of the Real Armada), a first change of plans disrupting the journey to Seville. General Coloma ordered the fleet to winter in Havana, instead of sailing to Cadiz as originally planned. Although the documentation does not specify the reason, we know that the English fleet led by Francis Drake and John Hawkins was ravaging the Caribbean coasts at that time aiming to capture the Spanish fleet.

From the moment when General Coloma published the wintering order in Havana, a series of mishaps and accidents occurred, increasing the transaction costs of the *Nuestra Señora del Rosario*. The forced stay in the Caribbean port compelled Coello to unload the cargo. The silver was taken to a safe place, and the pigments stored in warehouses. However no suitable storage place could be found for more than 9,000 hides, so the *maestre* had no choice but to keep them outdoors. To protect the hides, according to custom and usage, he used 572 units of the same batch as cover against the strong Caribbean sun and downpours. These 572 hides would become useless and rotten. *Maestre* Coello then had to face more unforeseen expenses, such as a second careening of his ship. The ship had already received its routine mandatory careening in San Juan de Ulúa. However, the forced stay on the island allowed shipworms — marine molluscs that perforate submerged wood — to damage the ship's hull. Coello paid 2,000 ducats for a second careening "so that the silver and merchandise could come on her [the ship] more safely".[20]

Once the winter was over, Coello loaded the ship again, but when the goods were already on board, he received the order from Captain General Francisco de Coloma that the *Nuestra Señora del Rosario* was going to be seized and converted into a Real Armada ship for the return voyage to Spain. At that point, the ship was loaded with silver and high-value products, including the silver and pigments she originally carried, as well as more silver from other ships. It now also hosted a contingent of marine infantry troops.

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al general Francicisco Coloma desde que partió de Cádiz en 23 de febrero de 1594, hasta que entró en La Habana.

19. The value and quantities of the products loaded are as follows: 1,575 *arrobas* of cochineal (value: 31,815,000 *maravedís*), 9,401 hides (6,747,640 *maravedís*), 3,918 pounds of indigo (2,531,028 *maravedís*), 1,559 pounds of silk (1,684,740 *maravedís*), and some loose crates with unspecified cargo (64,102 *maravedís*). See footnote 26 for the definition of *maravedís*. The ship also transported silver, but neither the quantity nor the amount is specified, because this product is not included in the proportional distribution of GA. AGI, Seville, Contratación, leg. 740: *Repartimiento sobre avería gruesa de la nao* Nuestra Señora del Rosario, *maestre Cristóbal Coello. Proveído por la Real Audiencia en 6 de octubre de 1608*, fols. 275 and ff.

20. AGI, Seville, Contratación, leg. 740: Claim for GA and other requests, settled in 8 June 1595, fols. 1-3.

Because of this change, Coello was forced to remove most of his own hides, which he managed to hastily reload overnight into four other vessels travelling with the fleet before their departure the following day.[21] As a result, the cargo transfers were not fully recorded, and Coello only managed to obtain a few receipts. Coloma also ordered the transfer to Coello's ship of a more high-value cargo — silver, silk, indigo and cochineal — from the ships of the *maestres* Cristóbal García de la Vega and Cristóbal López.[22] After the cargo was reallocated, the total value of the cargo in the hold of *Nuestra Señora del Rosario* exceeded 202,000 ducats.

Whilst still in the Bahamas Channel, the fleet encountered heavy storms and the *Nuestra Señora del Rosario* was severely damaged by strong sea swells and the entry of water. Her hull was split open in several places, the main mast was cracked, and the ship was in danger of breaking up. Faced with the risk that the ship and its crew would be lost, all rigging was cut, and the mainmast with its sail and yard, as well as the mast and mainsail, were thrown into the sea. In addition, a cedar plank netting was jettisoned, as well as 40 cow hides that were covering the crates of silver, 23 cedar planks, some anchor traps, another large anchor, some cables, 20 sailors' boxes and other soldiers' boxes, chairs and furniture, and more than 500 empty jars.

The storm caused severe damage and generated serious doubts as to whether the *Nuestra Señora del Rosario* would actually be able to reach Seville. After these mishaps, the ship rejoined two other ships of the fleet: those of Rodrigo Madera and Bartolomé González. A shipboard committee formed by the infantry captain Pedro de la Dueña (ex-governor of Cartagena de Indias), the pilots of the ships together with the seamen and soldiers decided to take the silver from master Coello's *Nuestra Señora del Rosario* and master Cristóbal López's ship and transfer it to that of *maestre* Madera. At the same time, the silver belonging to *maestre* Cristóbal García de la Vega was transferred to the ship of Bartolomé González. The rest of the cargo, including cochineal, silk, *grana*, indigo and the other hides, could not be accommodated in the holds of the other ships, however. When the seamen and soldiers realised that the silver had been taken out of the holds of the *Nuestra Señora del Rosario*, they tried to abandon ship. The infantry captains of the *Nuestra Señora del Rosario* and of Rodrigo Madera's ship, together with the pilots of his auxiliary vessel, agreed that a recompense should be

21. Cristóbal Coello transfers the hides of his cargo to the ships of Miguel Dejun (3 350 hides), Cristóbal Remirez (810 hides), Antonio Marín (2200 hides), and Pedro Milanés (615 hides).

22. *Maestre* Cristóbal García de la Vega's ship *San Francisco* carried 935 *arrobas* of cochineal (value: 18,887,000 *maravedís*), 4,525 pounds of indigo (2,923,150 *maravedís*) and 413 pounds of silk (355,180 *maravedís*). This cargo was carried to Coello's ship. Cristóbal López's ship *La Magdalena* transferred 150 *arrobas* of cochineal (3,030,000 *maravedís*), 2,961 pounds of indigo (1,912,806 *maravedís*) and 150 pounds of silk (139,000 *maravedís*) to Coello's ship.

given to the seamen and soldiers sailing in Coello's ship to encourage them to stay on board. For this purpose, 3,200 ducats were taken from private individuals and distributed among them. The payment of the bonus averted the threat of desertion.[23]

The *Nuestra Señora del Rosario* arrived in Lisbon on 7 May 1595 in a very precarious state, along with other damaged ships. The king sent twelve galleys to collect the silver and cargo and transport it to Seville.[24]

In June 1595, *maestre* Cristóbal Coello filed an application before the Real Audiencia de la Contratación de las Indias for a declaration of GA, in which he demanded the proportional distribution among the interested parties of the damages and expenses generated as a consequence of the cargo transfers, careening, storage, jettison of multiple items and payment of the bonus. Master Coello also requested the Audiencia to pay him the full freight charges, without any discount whatsoever.

In addition to the interested merchants and the aforementioned *maestre* Coello, the "defender of the dead and absent" appeared as a party in the legal proceedings.[25] The lawyer of the Universidad de Cargadores a Indias, the representative group of Sevillian merchants who usually intervened as consular representation and defended the positions of the merchants, also appeared in the lawsuit. In this way, individual merchants often saw their defence reinforced. Two merchants attacked *maestre* Coello. They contested the existence of GA, arguing that the damages and expenses had not really been incurred for the benefit of the venture. If the hides rotted, it was the fault of the *maestre* and his defective care. It was not the merchants' responsibility to pay for the second careening, since it was an expense that was always incumbent upon ships' *maestres* and was included in the price of the freight. It was Coello's own obligation to keep his ship "watertight in keel and sides of the hull". On the other hand, if he had to transfer cargo from his ship to others, it was not the merchants who should be responsible for this expense, but the captain general Francisco Coloma himself. To round off the refutation of responsibility, the merchants argued that the damages caused by the storm were not due to a fortuitous event for which the master was not responsible. On the contrary, they claimed that Coello had sailed his ship without being properly rigged. They also contested the alleged jettison, as the ship's scribe had not recorded it. Furthermore, in the merchants' opinion, the distribution of the 3,200 ducats among the seamen and soldiers "is out of all reason and right", since it was their duty to do their job without any reward beyond what the king paid them. Hence, if Coello granted the payment, it was only so

23. AGI, Contratación, leg. 740, no. 1: Claim for GA…, fols. 1-3.
24. *Colección de documentos inéditos…*, 1923, pp. 62-63.
25. *Defensor de los muertos y ausentes*, as a party interested in defending the interests of individuals who died or are not represented at the trial.

that the sailors would continue to take care of his ship, and not for any other purpose or cause. The ship was sound enough to sail back to Spain and she had arrived in Seville without further problems.

The allegation period was followed by the evidence phase in which Coello presented a list of witnesses who would testify about the events that took place on the return trip to Seville. The opposing party did not present any witness evidence at this stage of the proceedings. In its sentence of 14 November 1595, the Real Audiencia de la Contratación declared that *maestre* Coello had provided grounds for his request and that the opposing parties could not prove their arguments. The defendants were therefore sentenced to the payment of:

- 572 hides that rotted in Havana for the benefit of the rest of the hides that were preserved; after the judgment their value was assessed as 388,960 *reales*,[26]
- 4,290 *reales* for the loading and unloading of the merchandise,
- 3,360 *reales* for the ship's rigging,
- 920 *reales* for two traps,
- 50 *reales* for a large anchor,
- 3,040 *reales* for two cables,
- 330 *reales* for two capstans,
- 430 *reales* for the mahogany masts and the chairs and furniture,
- 300 ducats for the main mast,
- 100 ducats for the head mast,
- 50 ducats for the main topsail,
- 35 ducats for the cap of the mast head,
- 45 ducats for the main top mast,
- 14 ducats for the topsail spars,
- 150 ducats for the topsail sail,
- 180 ducats for the main spars,
- 100 ducats for the mainsail,
- 60 ducats for 3 *jimelgas*,[27]
- 970 *reales* for 40 hides,
- 50 ducats for twenty sailors' boxes etc.,
- 750 *reales* for 500 empty jars,
- 3,200 ducats paid to the seamen and soldiers for bringing the ship safely back to Spain.

Under this sentence, the total expenses for GA were to be reapportioned against the price of the merchandise, adding the value of the ship with its rigging, and that of the freights earned in the voyage.

26. The *real* was the principal silver currency across the territories of the Iberian crown, in the sixteenth century one silver *real* was subdivided in 34 *maravedís*. See E. Lorenzo Sanz, 1980, p. 65; see pp. 53-69 for the full discussion.

27. These were wooden reinforcements shaped to wrap around masts.

Following the logic of the law and other legal GA proceedings in the Carrera de Indias, the silver that was transferred before the attempted desertion of the crew should have been included in the apportionment. However, that did not happen on this occasion, and we have not found the reason why the value of such a precious cargo was not included in the *repartimiento* ordered by the court. Strictly speaking, the silver was also concerned by all the expenses and sacrifices made during the voyage and should have been included in the proportional distribution, as it was in other GA cases. The parties may have agreed extrajudicially to remove the silver from the *repartimiento*, although we cannot confirm this.

The terms of the sentence had been quite favourable to *maestre* Coello, although the judicial decision had not allowed the value of the jettisoned rigging to be included in the *repartimiento* – as this was forbidden by the ordinances – nor the cost of the second careening. In accordance with the ordinances of the Casa de la Contratación, the royal court had acted correctly.[28] The extraordinary aspect of this judgment lies in the interpretation of the awarding of 3,200 ducats to the seamen and soldiers as an expense made for the benefit of all interested parties. This type of expense was not considered in the legislation and there was no similar precedent, but the Royal Court applied a flexible interpretation of the rule, agreeing that if this expense had not been made, the ship would not have been able to return safely with her cargo to Spain.

Once the judgment was issued, the merchants' Consulate of Seville filed several petitions, requesting that the decision be annulled and that the court reexamine the witnesses. The merchants' defense tried to reactivate the opposition to Coello's claim, based on new documentation showing that the *maestre* had actually offered his ship to Francisco Coloma for conversion into a navy ship. The *maestre*'s offer was intended to prevent part of the most valuable cargo from remaining in Havana until new transport could be found. If the *Nuestra Señora del Rosario* had not been chosen as a navy ship, Coello would have been forced to stay in the port of Havana with his ship and all the cargo, except the silver. This would have caused a serious delay in the delivery of that cargo to the interested parties. By offering his ship, however, Coello could travel to Seville with a large part of the most valuable cargo. If this turned out to be true, the GAs could be called into question due to the *maestre*'s lack of credibility. This new version, according to the consulate, changed his story because it turned the orders of Captain General Francisco Coloma into a voluntary – not forced – agreement, so that a good share of the expenses could not be imputed to *force majeure*.

The lawsuit was appealed before the Consejo de Indias in Madrid, and after lingering for a few years in the higher instance Court, it returned to

28. *Ordenanzas reales para la casa de la contractacion de Seuilla*…, 1553.

Seville. The heirs of the deceased master Cristóbal Coello, his widow and children appealed to the Real Audiencia of Seville for a declaration of *res judicata*, and in 1608 the court ruled in their favour.[29] The document of proportional distribution of costs presented by the expert calculator Antón de Almonte (also a captain in the Carrera de Indias) was received in court on 6 October 1608, thirteen years after the original filing for GA.[30]

The case of the *Nuestra Señora del Rosario*, with the accidents and mishaps suffered during the voyage and the complex legal proceedings that followed, is an excellent example of the operational and legal complexities of early modern Oceanic navigation. The quantitative data generated by this case provides us with high-quality and precise figures that are impossible to otherwise obtain. At the same time, it is important to underline how uploading cases such as this one – which includes more than 600 folios of documentation – is a very time-consuming activity, and it is hoped that further funds will make it possible to populate the Iberian side of the database in the future.

5. Marine insurance in seventeenth-century France

As marine insurance developed in medieval Italy, and its use subsequently proliferated across Europe, insurance centres developed divergent approaches as to whether insurance policies should cover General Average contributions or not.[31] By the seventeenth century, however, it was commonplace for insurers to bear the costs of GA (with Venice as a crucial exception to the rule).[32] Therefore, in the process of studying the intersection of these distinct tools of risk management, I constructed two datasets pertaining to two largely forgotten insurance institutions operating in Paris under Louis XIV. The Royal Insurance Chamber was established in 1668 under the auspices of Jean-Baptiste Colbert. In some ways reminiscent of Lloyd's coffeehouse, the

29. AGI, Contratación, leg. 740, no. 1: Decision of the Real Audiencia de la Contratación de las Indias declaring *res iudicata*.

30. AGI, Contratación, leg. 740: Repartimiento — proportional cost sharing document — entitled *Anton de Almonte en quien están remitidas las quentas y rrepartimiento de la aueria Gruessa de la Nao nombrada Nra señora del rosario de que fue maestre xpoual coello quel año passado de nouente y cinco vino de la prouinçia de nueua españa en la flota de que fue general Marcos de arambul y de la hauana a estas partes vino don Fran^co^ Coloma. La qual dha aueria Gruessa yntento el dho maestre xpoual coello con los ynteressados en las mercadurias cargadas en la dha nao en la prouinçia de la nueua españa y con los ynteressados en las mercadurias que en la hauana se onderaron en la dha nao de las naos de xpoual garçia de la Vega y xpoual lopez como todo mas largamente consta por el pleito quel dho xpotual coello tiene puesto y acauado Ante los siguient^es^ Pressidente y oydores de la rreal audiençia de la cassa de la contrataçom Digo que auiendo visto el dho pleito yo hize las dhas quentas y Repartimiento en la manera siguiente…*, fols. 275-292.

31. Here, see the contributions in M. Fusaro, A. Addobbati & L. Piccinno, 2023.

32. For more on this, see L. Wade, 2023a, ch. 6.

Chamber was a space for underwriters, policyholders and commission agents to meet to negotiate policies. The *AveTransRisk* database contains all of the 4,154 policies signed in the Chamber in the years 1668 to 1672.[33]

In 1686, the Chamber gave way to the Royal Insurance Company. Established by Colbert's son, the marquis de Seignelay, this was, as far I am aware, the first chartered company in the history of marine insurance. Thirty shareholders invested 300,000 *livres tournois (lt)* in the Company, with a small group serving as directors to manage the Company's underwriting portfolio on behalf of the other investors. All 3,409 of the Company's policies are captured in the *AveTransRisk* database from 1686 to 1700.[34]

Datasets on pre-modern marine insurance are scarce, so these are valuable tools for economic historians.[35] The basis for the Chamber dataset is the institution's full form policy registers, which were kept by the Chamber's registrar and clerk to record the insurance policies that were negotiated and signed in the institution's registry. Keeping precise copies of policies in this manner ensured that the exact terms of these contracts were recorded in a single, secure place, surveilled vigilantly by the registrar and clerk, but could nevertheless be easily consulted and clarified by underwriter and policyholder alike. Moreover, copies of the policies recorded in the registers could be provided where necessary to facilitate arbitration or legal proceedings.[36] Although the function of these registers was primarily legal, it is clear they were also used to keep track of the scale of the Chamber's underwriting: in his bestselling merchant manual, *Le parfait négociant*, Jacques Savary – who had close ties to the Chamber – estimated that the institution's underwriting in 1672 amounted to between six and seven million *livres*; my data analysis from the Chamber's registers confirms that its coverage that year indeed amounted to just over six million *livres* in total (Table 1).[37]

In engaging with these registers, my priority was to extract the name and location of the policyholder (and commission agent, where appropriate), the name of the vessel and master, the voyage being insured, the premium rate, the insured effects, and the underwriters' commitment to the policy. In the interests of inputting data in a timely manner, policies were not transcribed,

33. For more on the Chamber, see L. Wade, 2023a, chs. 1, 3-4 and 6-7; L. Wade, 2022. For more on Lloyd's coffeehouse, see C. Wright & C. E. Fayle, 1928.

34. For more on the Company, see L. Wade, 2023a, chs. 2-3, 5-6 and 8; L. Wade, 2023b.

35. For point of comparison, Jeroen Puttevils and Marc Deloof's study of Juan Henriquez's famous insurance ledgers from sixteenth-century Antwerp comprises 1,621 policies; J. Puttevils & M. Deloof, 2017.

36. Here, see L. Wade, 2023a, ch. 7.

37. J. Savary, 1757, book II, pp. 112-113; L. Wade, 2023a, p. 140. Although Savary writes "1671" in his discussion, he is discussing the Dutch War (1672-1678), so it can be fairly assumed he meant 1672.

Table 1. *The Chamber's underwriting in the years 1668-1672*

Year	*Total underwritten*	*Number of policies*
1668	998,130	364
1669	1,824,250	523
1670	3,023,102	727
1671	4,726,072	977
1672	6,086,089	1,563
Total	16,657,643	4,154

Sources. ATR; L. Wade, 2023a, p. 140, based on data from AN, Z/1d/75-8.

meaning that tailored policy clauses and details not pertaining to the above-mentioned data were not recorded.

By contrast, the basis for the Company dataset is the institution's "alphabetical" register, i.e. a register summarising the policies and sea loans (*prêts à la grosse aventure*) that were signed, with vessels grouped together alphabetically. (In a sea loan, the creditor gives a lump sum upfront for a voyage, which is only repaid if the vessel completes its journey.[38]) This register was kept so that the registrar could advise the directors if they had already covered a given risk in a prior contract, ensuring they did not unwittingly agree to further coverage that was beyond what they were comfortable offering.[39] The register recorded the name of the policyholder/commission agent (never both), the name of the vessel and master, the voyage being insured, and the Company's commitment to the policy/sea loan. In this case, the entirety of the information recorded in the register is captured in the database.

To understand how the datasets are presented in the database, and their potential for researchers, it is worth exploring a specific policy from the Chamber in detail. On 28 January 1672, with the Dutch War looming, M. Pocquelin and Pierre Formont secured an insurance policy of 5,000 *livres* on *La Ville de Paris*' voyage from the Caribbean to France.[40] This policy is the basis for a record in the *AveTransRisk* database comprising three tabs, outlined in Table 2: the "Vessel" tab, the "Ports visited" tab and the "Insurance/loans" tab.

38. For more on sea loans, see F. Edler de Roover, 1945; R. Harris, 2020, pp. 110-118; L. Wade, 2023a, chs. 2 and 5.

39. More on this register can be found in L. Wade, 2023a, ch. 5.

40. This policy can be accessed online (URL: http://humanities-research.exeter.ac.uk/avetransrisk/voyages/insurance_loans/95166/, accessed 10 September 2023).

Table 2. *The three tabs relevant to the French datasets*

Vessel	Name of vessel and shipmaster (where known)
Ports visited	The ports visited (or potentially visited)
Insurance/loans	See tables and discussion below

Source. *AveTransRisk* database (hereafter ATR),
URL: http://humanities-research.exeter.ac.uk/avetransrisk,
accessed on 26 October 2022.

The "Vessel" tab is straightforward, outlining the name of the vessel and its shipmaster, where known. The "Ports visited" tab can be more complicated. In the case of *La Ville de Paris*' voyage, it can be expressed easily as below, and this is how it is displayed in the database.

Caribbean → France

In this case, with the imminent threat of war, *La Ville de Paris* was permitted to return to any safe port in France.[41] Yet in other policies across the period 1668 to 1672, it was common to specify multiple possible ports of origin or destinations. Let us take the voyage below: this is *La Marie*'s voyage (insured in 1668) from Newfoundland to France, with the vessel permitted to travel to *either* La Rochelle *or* Ciboure.[42] We are not told which reality ultimately obtained. Thus, the database captures both possible realities, marking La Rochelle and Ciboure as "possible destinations" in this case.

Newfoundland → La Rochelle *or* Ciboure

Finally, the "Insurance/loans" tab captures the details of the policy pertaining to *La Ville de Paris*. The tables that follow are derived from this tab. First, the tab displays the basic details of the policy, expressed in Table 3.

Table 3. *The basic details of the policy on* La Ville de Paris

Type of contract	Insurance
Date of policy	28-01-1672
Voyage outcome	Arrived safely (*arrivé*)
Amount underwritten	5,000 *lt*
Policyholders	M. Pocquelin and Pierre Formont

Source. ATR.

41. Such flexibility was common in 1672; see L. Wade, 2023a, ch. 4.
42. This can be accessed online (URL: https://humanities-research.exeter.ac.uk/avetransrisk/voyages/92586/, accessed 6 December 2022).

Next, the tab outlines the effects that were being insured. While modern marine insurance tends to differentiate between hull and cargo insurance, a large variety of effects were insured in the Chamber, and in various combinations too. We can see this in the case of *La Ville de Paris* (Table 4): the hull itself was insured, alongside various other parts of the ship. Furthermore, besides the cargo, other investments relating to the crew were covered. These included food provisions, which were most crucial for a transatlantic voyage, and the advances made to the crew on their wages. In other policies, like the one on *La Marie*, we see the insuring of sea loans. Thus, the database captures the capacity for marine insurance to facilitate credit transactions between merchants, shipowners, shipmasters and crewmembers.

Table 4. *The effects insured on* La Ville de Paris' *voyage*

Hull (*corps*)
Keel (*quille*)
Cords (*agrès*)
Tools (*ustensiles*)
Food provisions (*victuailles*)
Ship furniture, e.g. anchor, sail (*apparaux*)
Merchandise/cargo (*marchandise/cargaison*)
Advances to the crew (*avances faites aux matelots/à l'équipage*)

Source. ATR.

Following from this are the details of the premium. Here, *La Ville de Paris*' policy was quite complicated. A premium rate of five per cent was agreed at the time the policy was signed, but through a clause in the policy, Pocquelin and Formont agreed to pay a four per cent augmentation in the premium in the event that war was declared during *La Ville de Paris*' voyage. Thus, the premium on the policy was either five per cent or nine per cent in total; the Chamber's registers do not tell us if war clauses were ultimately activated or not. Nevertheless, the *AveTransRisk* database has been tailored for precisely such instances, capturing both sets of data (Table 5).

Table 5. *The premium rate details for the policy on* La Ville de Paris

Premium rate	5.00%
Total premium rate (min)	5.00%
Total premium rate (max)	9.00%
Premium augmentation	4.00%
Total premium (min)	250 *lt*
Total premium (max)	450 *lt*

Source. ATR.

This data is used to populate Table 6. This breaks down the subscriptions made by individual underwriters, partnerships and companies. In the case of *La Ville de Paris*, individuals alone underwrote the policy. The database calculates both the minimum share of the premium that would have accrued to each underwriter (assuming the war clause was not activated) and the maximum share (assuming the war was clause *was* activated).

Table 6. *Underwriters of the policy on* La Ville de Paris

Name	*Amount underwritten*	*Share of premium (min)*	*Share of premium (max)*
Nicolas Formont	500 *lt*	25 *lt*	45 *lt*
Jean Roussel	1,000 *lt*	50 *lt*	90 *lt*
Elisabeth Lefebvre	1,000 *lt*	50 *lt*	90 *lt*
Étienne Suplegeau	500 *lt*	25 *lt*	45 *lt*
M. Marchand	1,000 *lt*	50 *lt*	90 *lt*
Louis Froment	1,000 *lt*	50 *lt*	90 *lt*

Source. ATR.

Individually, *La Ville de Paris*' policy offers a valuable case study for the nuances of marine insurance in this period. Nevertheless, the datasets are at their most useful when multiple records are used together. Among the underwriters on *La Ville de Paris* was Elisabeth Lefebvre, a Parisian widow. Table 7 collates the data on all the policies she signed, giving a

unique insight into her portfolio.[43] We can see that she was a latecomer to the Chamber; she began underwriting only in 1671 before developing an extensive portfolio in 1672 when the threat of war loomed. We can see that Lefebvre recognised the risks of underwriting in such a tumultuous time, and adjusted her portfolio accordingly: while her forays into the market in 1671 comprised large subscriptions, her 1672 portfolio centred on a much larger number of smaller subscriptions (with her median subscription dropping by a factor of ten, and her smallest by a factor of twenty). Nevertheless, her losses in 1672 (8,900 *livres*) vastly outweighed her gross premium income, which sat anywhere between 6,898 and 7,208 *livres*, owing to war clauses in some of the policies she underwrote (see above).

Table 7. *The underwriting of Elisabeth Lefebvre in 1671 and 1672*

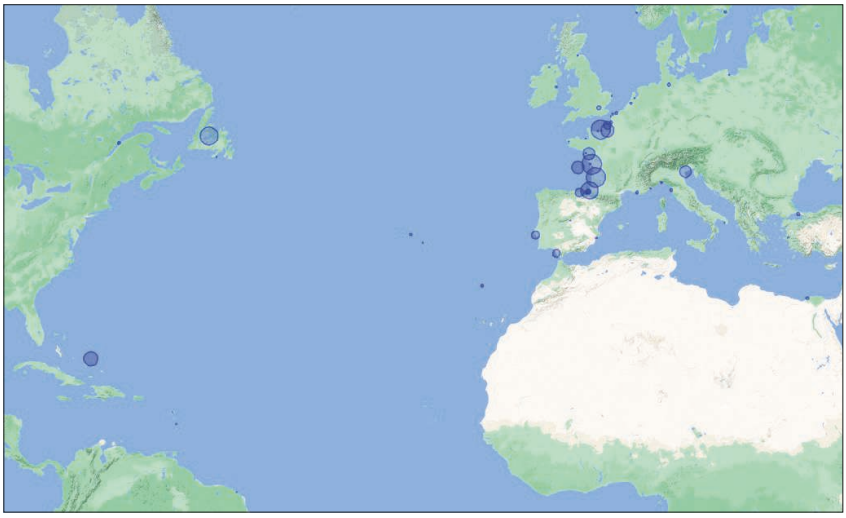
Year	*No*[a]	*Total underwritten*[b]	*Min*	*Max*	*Mean*	*Median*	*GPI (range)*[c]	*Losses*
1671	3	9,000	2,000	4,000	3,000	3,000	510	-
1672	134	62,050	100	3,600	460	300	≥ 6,898 ≤ 7,208	8,900
Total	137	71,050	100	4,000	515	300	≥ 7,408 ≤ 7,718	8,900

Notes. *a*. number of policies signed, *b*. in *livres tournois* (as with all the subsequent columns), *c*. gross premium income.
Sources. ATR; L. Wade, 2022.

The *AveTransRisk* database also allows the user to generate maps for each underwriter/partnership/company, displaying their portfolio in a given year or across multiple years. Figure 2 displays Lefebvre's portfolio in 1672, which reflected the broader Atlantic orientation of the Chamber's underwriting. Although unsurprisingly centred on the commerce of Atlantic France, Lefebvre's portfolio extended from Veracruz in the west to Alexandria in the east, from Greenland in the north to Cayenne (French Guiana) in the south. Indeed, the Chamber and Company datasets document economic activity between Europe and every inhabited continent except Oceania, offering the historian a valuable insight into French shipping and risk management.

43. For more on Lefebvre, see L. Wade, 2022.

Figure 2. *A map showing Elisabeth Lefebvre's underwriting portfolio in 1672, generated in the* AveTransRisk *database*



Note. The size of the circles corresponds with how frequently each port/place/country (as named in each policy) appeared in her portfolio. NB Greenland is not included in the image.
Sources. ATR, Google Maps.

Overall, then, we can see how the Chamber dataset can be used by historians for a multitude of enquiries: the quantitative historian might seek to track and analyse premium rates for given types of voyage; the more socially-oriented economic historian might wish to construct a rich case study of an individual underwriter; the database can accommodate both of these historians and many more besides. Indeed, using the database, I have been able to document and evaluate the role of women like Lefebvre in the execution of Colbert's commercial and colonial policy: Lefebvre was one of a handful of women who underwrote voyages undertaken by the vessels of Colbert's chartered companies, including the Northern Company (Compagnie du Nord) and West India Company (Compagnie des Indes occidentales). Her colleague, Anne Jousse, also underwrote a private slaving voyage in 1670, and Marie de Longueuil, marquise de Soyécourt, invested in another such voyage through a sea loan. The database thus offers a remarkable insight into the economic agency of Parisian women in the development of France's early Atlantic empire.[44] I had not anticipated using the dataset to write on gender

44. L. Wade, 2022.

history when I began putting it together, but this is only further evidence of its richness and wide appeal to historians working in all parts of maritime history.

We have looked so far at a policy from the Chamber, but it is important to note that records pertaining to the Company are presented slightly differently (see Table 8 for an overview of its activities). The "Vessel" and "Ports visited" tabs remain unchanged, but the "Insurance/loans" tab is different as the two datasets are based on different source bases. In the case of the Company, the record is based around the *risk* (any particular combination of vessel, voyage and policyholder/debtor) rather than the *policy* – that is to say, a record might comprise multiple insurance policies and/or sea loans on the same risk. This offers interesting insights into risk management from the perspective of both the insurer/creditor and the policyholder/debtor: just as it is intriguing to observe that a policyholder/debtor might seek multiples policies/loans on the same risk, so it is striking that the Company was willing to agree to them.

Table 8. *The underwriting and sea loan activities of the Company, 1686-1698*

Year	*Total underwritten*	*Number of policies*	*Total loaned*	*Number of loans*
1686	478,166	117	45,800	16
1687	1,491,356	286	90,475	35
1688	1,901,135	426	81,500	31
1689	1,392,734	427	20,040	10
1690	2,801,588	610	55,600	19
1691	3,420,920	673	34,340	15
1692	2,369,080	549	21,350	6
1693	852,302	226	4,700	4
1694	148,500	52	6,700	4
1695	10,400	4	-	-
1698	170,000	39	-	-
Total	15,036,181	3,409	360,505	140

Sources. ATR; L. Wade, 2023a, pp. 173-174.

Table 9. *The number of insurance policies signed in each month by the Company in the years 1686-1698*

Month	*Frequency*
January	216
February	249
March	263
April	319
May	243
June	275
July	234
August	221
September	265
October	354
November	408
December	300
Total	3,347

Note. 62 policies where the exact date of signing was unclear or not stated have been removed for these calculations.
Source. ATR, based on data from AN, Z/1d/85.

Historians interested in quantitative analyses of underwriting will be able to do much with both datasets, although the Chamber dataset may prove more useful in some instances. Table 9 illustrates that the Company signed policies most frequently in late autumn and early winter; October and November were the peak months, most likely a result of the greater natural risks in these months as weather worsened. Using a collection of insurance policies from Amsterdam in 1769, Frank Spooner found, for insurance policies signed in the summer, that there was a linear correlation between the distance of the voyage and the premium rate. This reflected the perceived stability and predictability of hazards in these months. By contrast, "winter destroyed the apparent unity of the system. The harsh conditions in sailing to the north moved the market from fixed risks to conditions more affected by event uncertainties".[45] In proving so willing to sign winter policies,

45. F. C. Spooner, 1983, p. 130.

one might hypothesise that the Company was engaging in riskier underwriting, bearing greater uncertainty in exchange for the prospects of better returns. Sadly, the source base for the Company provides neither premium rates nor details on the insured effects, so it is impossible to prove this definitively. The completeness of the Chamber data, however, would provide scope for analyses of this kind. Moreover, it is still possible to use the Company dataset to analyse maritime and commercial activity during the Nine Years' War; indeed, in my monograph, I use the dataset alongside other sources in the Archives nationales to argue that the Company was being used by the French crown to protect domestic and neutral shipping during the war to make up for the weakness of the French navy. This offers a unique contribution to the historiography on corporations, making the explicit argument that shareholder returns were not the guiding force behind the Company's activities.[46]

Overall, the datasets from the Chamber and the Company are valuable tools for studying maritime commerce in Old Regime France. Furthermore, the mapping functionality of the *AveTransRisk* database would allow academics to use the datasets as teaching aides, helping students to visualise and understand maritime activity in this formative period of economic development.

Conclusions

The *AveTransRisk* database is a large and flexible tool. Originally designed on the model of the paper cards developed by Giuseppe Felloni to deal with the Genoese GA data, it has expanded to accommodate a wider variety of evidence connected with maritime risk. Our decision in this regard was shaped by the fact that all these sources provided information on a large set of common variables (name and nationality of ship; name and nationality of ship masters, routes, quantities and value of cargo) and it made thus sense to group them together.

The nature of the primary evidence contained in the *AveTransRisk* database obliged us both to make choices that would ensure the original evidence was respected and to compensate for the variety of the primary evidence. The solutions we devised – discussed in the article by Iodice, Dyble and Wellaway – allowed us to make the necessary adjustments. The database is a work in progress; we shall continue to add data in the future and respond to the queries and suggestions received from its users.

46. Here, see L. Wade, 2023a, ch. 5.

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