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**ARTÍCULOS DOCTRINALES / ARTICLES**

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**ACCOUNTING AND INSURANCE IN THE EARLY MODERN AGE****Potito Quercia**

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**Abstract:** This article aims to offer, through the use of sixteenth-century accounting sources, a contribution on a crucial issue for the development of Mediterranean transports and trades of the early modern age, such as the maritime insurance. The research focuses on the importance and high information potential of accounting records, even in this real economy sector. It analyzes a business case in one of the main maritime centers of the Mediterranean area, the city-state of Ragusa (present-day Dubrovnik), and is concerned with investigating the insurance activity of a Dubrovnik merchant. Through the analysis of the accounting records, in addition to the business dynamics and the economic and fiduciary relationships occurred between the merchant and the other actors of the security contract, aspects related to the insurance management, profits and losses of the same are taken into consideration. In addition, the relevance and close connection of insurance with the businesses and the ship owners' interests of the company is also considered.

**Keywords:** *Accounting History, Insurance, Modern Age, Ragusa***CONTABILIDAD Y SEGURO EN LA TEMPRANA EDAD MODERNA**

**Resumen:** Este artículo tiene como objetivo ofrecer, mediante el uso de fuentes contables del siglo XVI, una contribución sobre un tema crucial para el desarrollo de los transportes y comercios mediterráneos de la temprana Edad Moderna, el seguro marítimo. La investigación se centra en la importancia y el alto potencial de información de los libros de cuentas, también en este sector de la economía real. El trabajo analiza un caso de negocios en uno de los principales centros marítimos del área mediterránea, la ciudad-estado de Ragusa (hoy Dubrovnik), y se ocupa de investigar la actividad de seguros de un comerciante de Ragusa. A través del análisis de los registros contables, además de la dinámica empresarial y las relaciones económicas y fiduciarias entre el comerciante y los demás actores del contrato de seguridad, se consideran los aspectos relacionados con la gestión de seguros, las ganancias y pérdidas derivadas del desempeño de esta actividad. Finalmente, se analiza también la relevancia y la estrecha conexión del seguro con los negocios y con los intereses de los armadores.

**Palabras clave:** *Historia de la Contabilidad, Seguros, Edad Moderna, Ragusa***Copyright:** (c) 2020 Potito Quercia. Este es un artículo de acceso abierto distribuido bajo los términos de la licencia Creative Commons Attribution (CC BY-NC-SA 4.0).

## 1. Introduction

The development of accounting theories and techniques, and the documentary heritage that is preserved in the main archives of the Mediterranean area, have constituted a fundamental information potential for accounting historians, to reconstruct the socio-economic environments that have characterized the major maritime centers of the Mediterranean<sup>1</sup>. Within this context, maritime insurance played a central role in the growth and development phases of trade between East and West.

Since the late Middle Ages, when Mediterranean trade showed signs of vitality and expansion, the role of the main risk markets operating on the Spanish side, in the central Mediterranean and in the Adriatic area, has been decisive for the subsequent expansion of regional and international trade. Insurance, on the one hand, often represented forms of sharing to deal with the risks in sea transport, on the other hand it represented a new opportunity for capital investment for those economic subjects, and for some important representatives of civil society, who wanted to diversify the use of financial resources. In some cases, hedging has been a real factor in the socialization of risk, as demonstrated by recent studies on the insurance market in Mallorca (Quercia, 2014).

Research on the economic aspects of insurance offers ample evidence of the existence of a dynamic and decisive sector for the expansion and development of overseas businesses. When, with the birth of the insurance institute, between the 14th and 16th centuries, the security contract took on a standardized formula, it spread rapidly throughout Mediterranean Europe. Subsequently, the discovery of the new world and the developments of the oceanic routes, besides promoting the consolidation of the security contract and the gradual transformation in the organization of the risk markets, encouraged the creation of important squares also on the Atlantic side.

At the beginning, dating back to the first decades of the 14th century, and for the following two centuries, from an organizational point of view, the insurances concerned the participation of individual operators at an individual level; the security contract, in fact, took place between a person requesting cover and one or more economic operators who, instead, assumed all or part of the risk. Between the late 17th century and, above all, during the first half of the 18th century, the organization of the markets evolved, and the insurance companies took on an associative role, giving rise to the first forms of companies, as we intend nowadays.

The choice of the subject matter of these pages is based, basically, on two orders of considerations: on the one hand, it is stressed that, in the context of the different documentary sources through which it is possible to study the insurance phenomenon, the accounting records present specific features for the analysis of certain aspects that, otherwise, would not come to the surface; on the other hand, it is believed that historical research has the need to offer further evidence on the real dynamics of the company of the early modern age, on the economic and fiduciary relations that existed between the subjects of the insurance act and, more generally, on the profitability of the sector, which only the accounting source can reveal. Finally, the need to deal with this issue also derives from the fact that, the numerous studies on insurance

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<sup>1</sup> In this regard, the numerous contributions and important scientific initiatives of Esteban Hernández Esteve, one of the leading European scholars in the history of accounting, are also significant (Hernández Esteve, 1981 and 2008). See also Antinori and Hernández Esteve (1994), Carmona, Ezzamel and Gutiérrez (1997), Carmona, Ezzamel, and Gutiérrez (1998), Carmona, Ezzamel and Gutiérrez (2004), Carmona and Donoso (2004), Romero Fúnez (2005), Gutiérrez and Romero (2007). Finally, see the innovative studies by Amedeo Lepore on the multiple use of electronic sources in economic history research and accounting history (Lepore, 2005, 2007 and 2009).

conducted in recent decades, there are rather few who have used the accounting documentation.

The paper analyzes a business case in one of the main maritime centers of the sixteenth century, the city-state of Ragusa (today's Dubrovnik). The research, carried out on primary sources, consisting of the accounting records of Vincenzo Stefani's company and kept in the Dubrovnik State Archive, intends to reconstruct and analyze the insurance activities of the Dubrovnik merchant-entrepreneur and the underlying accounting implications, in a broader and articulated socio-economic context. The main purpose is to trace the insurance profile of the Stefani and to demonstrate the importance that this activity could exercise within its company and, more generally, on the decision-making processes. In particular, the analysis aims to clarify the role played by Vincenzo Stefani as an insured, insurer and security reporter, and proposes to represent the privileged relationships and economic plots of various kinds that he maintained with the productive and institutional environment of the Dalmatian Republic.

During the discussion, we also try to investigate some aspects of the variables that influenced the insurance behavior of Vincenzo Stefani, and to understand the perception of risk and the level of sensitivity on the part of the merchant in relation with the maritime context of reference for his traffic. The contribution to the knowledge that the company accounting books are able to offer regarding the people, places and international businesses of Stefani is not negligible. Finally, of great interest is the possibility of being able to make an assessment of insurance profits.

The analysis of the archival sources consulted is done in a systematic way and uses the analytical tools of the accounting technique. Precisely for this reason, compared to the studies conducted so far, the survey has some unpublished traits, since in the specialized literature the cases in which, for the study of the phenomenon, the company writings have been used are very scarce. The paper is subdivided, essentially, into two parts: the first compares the information potential of insurance contracts with those offered by the accounting source, highlighting its peculiarities; the second part, instead, examines the concrete case of Vincenzo Stefani's company, developing all the aspects mentioned above.

## 2. The relevance of accounting sources in the study of the insurance companies

In the insurance field, one of the scholars who highlighted the information potential of accounting records was Federigo Melis, who in his investigation of Florentine commerce with the Americas, examining the very nourishing accounts of an important Sevillian entrepreneur, in the early 1950s, began to be interested in maritime insurance (Melis, 1954). When, in 1959, for the celebrations of the fiftieth anniversary of its foundation, the “Istituto Nazionale delle Assicurazioni” entrusted him with the task of preparing a volume on the origins and developments of insurance, he sifted through the merchant accounts of the Tuscan archives and the few existing ones in other regions, convinced that to reconstruct and faithfully represent the insurance activities it was necessary to use more sources that were systematic<sup>2</sup>. The “mercatesca” source represents, for the illustrious Florentine scholar, one of the most sought-after and important in the economic history of insurance, since it allows the problem to be brought back within the sphere of companies, an observatory that allows a non-superficial study of the Middle Ages (Melis, 1975, XIX).

On these premises, in the first part of the research, one of the aspects considered necessary

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<sup>2</sup> Despite the important function attributed to accounting records, in the classification made for the sources of the history of insurance F. Melis seems to prefer the source contract because, at least in the first phase in which the organization of the markets was focused on private insurers, contains the entire regulation of the matter (Melis, 1975, XXII).

to deepen concerns the type of contribution that private accounting documentation is able to offer to the study of the maritime insurances<sup>3</sup>. Understanding this problem requires a prior examination of all the elements that can allow a quali-quantitative approach and a faithful representation of the phenomenon. To this end, it should be emphasized that one of the archival sources often used for the study of insurance in the modern age is insurance contracts. It represents an important point of reference, due to the wealth of data and information it covers<sup>4</sup>.

The insurance act, in addition to the name, residence and activity carried out by the insured, reported his title of belonging to a specific social group; the contract then specified the quantities and the estimated value of the insured goods, the place of departure, the name of the person designated to manage the loading operations. In addition, the events or risks covered by the policy were clarified, as well as the type and name of the boat, the owner and the captain, the port of destination and any stopovers. Finally, the contract indicated the starting date and end of the security period, and the final risk-taking formula and the signature of the insurers, specifying the date, name, guaranteed quota, rate and premium for each subscription. In the fifteenth century, the most used forms of insurance concerned goods and boats, while less popular were insurance on people, sums of money and slaves, as well as reinsurance.

If it is true that the elements just mentioned allow us to reconstruct the insurance world of a certain square fairly eloquently, they nevertheless do not allow us to ascertain the journeys that have failed and the various problems relating to the recognition of the claim and the payment of damages. The content of the policy, in fact, is not sufficient to grasp equally important aspects, such as the occurrence and causes of the accident, the extent of the damage suffered by the insured, the amount paid, or the amount of profits made or losses incurred by insurers. With reference to this last aspect, it does not allow to adequately quantify the profits or losses deriving from the single contract and, more generally, from the set of insurance activities.

In essence, through the security contracts, although it is possible to reconstruct the “curriculum” of the various economic subjects involved and trace their profile as an insured, an insurer, or a mixed figure, without the aid of the accounting records one is not able to formulate definitive evaluations on other aspects such as, for example, the economic results of the insurance action. Moreover, for the purposes of the analysis, it is necessary to consider whether the liquidation of the damage was based on the share of risk assumed in the contract, or following a sentence of the judge, if the contracting parties had resorted to the courts to assert their reasons. Hence the importance of accounting records which, together with judicial documentation, are the only ones capable of offering reliable information on the amounts paid as compensation and on accessory costs. Another aspect that the company accounts can highlight concerns the various activities, often carried out by the owner of the company and in what relationship they were with each other. It allows us to fully grasp the role that the insurance business played within the company, whether it was an activity essential for trade or a real form

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<sup>3</sup> In this regard, Lucy Stuart Sutherland argued that the accounting books for medieval and modern history had a value similar to that the archaeological finds for ancient and medieval history (Sutherland, 1935, 69-72). See also Melis (1972).

<sup>4</sup> In the 15th and 16th centuries, the practice of stipulating security in the presence of a notary public was widespread in various centers of the Mediterranean, i.e. to provide for its registration when it was concluded privately. These formalities were made obligatory by ordinances which aimed, among other things, to reduce the reasons for the dispute in the event of an accident and to protect the weaker party, i.e. the insured, in the phase of assessment and settlement of the damage. In some places, taking out a contract with a public official was a necessary condition for initiating a possible dispute between the insured and the insurers. The notarial deed was requested in Barcelona, Mallorca and Genoa, not in Venice where, already in the 15th century, the activities concerning maritime insurance had their headquarters at the Calle di Sicurtà in Rialto, where the desks of the insurance brokers were located. On the Venetian and Tuscan markets, the security was concluded, for private or verbal writing, with the involvement of a broker (Nehlsen Von Stryk, 1988, 80-81).

of investment.

From what emerges, it is clearly understood that in the absence of accounting records that document, in addition to the costs incurred for passive insurance and the income represented by the premiums collected for active operations, the actual income for policyholders from compensation for damages suffered or the actual expenses paid by insurers for the settlement of damages, any type of analysis on the topic in question would be incomplete with these important elements of evaluation. Although some information about the convenience to invest in insurance may be inferred from commercial correspondence or other similar documentation, direct quantification can only take place through the accounting source. It should be noted, however, that one of the main limits encountered when the accounting documentation is used for insurance purposes is represented by the fact that of the hundreds of economic subjects that made up the insurance market, only a few held control of costs and revenues through an accounting system organized using the double-entry method.

### 3. Private accounting and insurance in a market in the Lower Adriatic

Among the merchant centers that played an important economic and financial role during the 16th century was the city-state of Ragusa<sup>5</sup>. It is an important observatory on the whole Mediterranean, also with reference to the insurance activity. The discovery, at the State Archives of Dubrovnik, of a precious collection of the books of the main protagonists of the economic life of the Republic was decisive in the choice of the subject matter of these pages. To the documentary series *Noli e Sicurtà, Sententiae Cancellariae, Debita Notariae, Diversa Cancellariae*, of a purely contractual nature, another one of an accounting nature has been added, which allows new elements to be brought to light, useful for a deeper understanding of some aspects of maritime insurance<sup>6</sup>. This is the *Privata* fund, which collects more than thirty accounting records, including one relating to the merchant enterprise of Vincenzo Stefani. It can be assumed that, even if in different archival series, the insurance activity of the market of Ragusa has left ample traces.

In reality, the use of accounting sources preserved in the Ragusa archives has largely concerned studies aimed at clarifying the organization and functioning of some state institutions, while the use of private accounting is rather scarce, useful to investigate some aspects of the activities carried out by the most important economic operators of the Dalmatian Republic<sup>7</sup>. On the market of Ragusa, the company's accounts provided for: 1) the “Libro grande” with an attached column, a sort of ledger book, which was sometimes divided into three sections: the first was entitled “Quaderno dei debitori e dei creditori”, the second “Libro delle mercanzie” and the third, and last, section, “Libro dell’entrata e dell’uscita”; 2) the “Libro giornale” in which all company operations were recorded in chronological order; 3) the “Libro delle ricordanze” which performed the functions of a sort of first accounting note in which all

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<sup>5</sup> The Republic of Ragusa, between the Middle Ages and the Modern Age, played a leading role in the merchant sector, «grazie all’intraprendenza di un ceto di armatori e di mercanti che seppe coniugare i traffici di terraferma con quelli marittimi» (Tenenti and Tenenti, 1985, 9). For a general overview, see instead Di Vittorio (1990), a volume containing the proceedings of the namesake international study conference (Bari 21-22 October 1988).

<sup>6</sup> An interesting classification of the imposing documentation, kept in the State Archives of Dubrovnik, is provided by Antonio Di Vittorio, in a collection of essays on the economic and financial history of the Dalmatian Republic (Di Vittorio, 2001, 3-8).

<sup>7</sup> The Dubrovnik archive contains accounting records from the mid-sixteenth century relating to a number of important figures in the square. These are account books, ledgers, account books and notebooks of debtors and creditors. Državni Arhiv Dubrovnik (from now on DAD), XIX, *Privata*, 10/a, cc. 42 and 44.

company operations were recorded daily in free form<sup>8</sup>. Business operations were first accounted for in the “Libro giornale” and then it was supposed to be put back in the “Libro grande”, which contained all the accounts intended for the collection of economic and financial facts; the latter could consist of several volumes, each of which was marked by the letters of the alphabet. When a volume was closed, the balance of the accounts included in it had to be determined and an accounting statement had to be drawn up which closed the book and represented the point from which the accounts could be reopened in the next volume. The keeping of the accounts, aimed at determining the economic result for the year and the balance sheet, followed the rules of the double entry, while the language in which the records were drawn up was Italian. The use of this language was justified by the fact that, in the commercial field, it was used throughout the Mediterranean, so it was easier for companies to communicate and compare accounting data with foreign correspondents. Of course, the configuration of the ledger and the consequent use of the accounts opened could differ from company to company, depending on the type of activity carried out. The plan of accounts, as we would define it today, could concern, depending on the case, the shipowner’s activity, the commercial one or the financial one.

About these accounting documents, and in particular the “Libro grande” or “Libro mastro”, it is worth noting the function that it could sometimes perform in the will. In fact, these records allowed the executors of the wills to reconstruct the company's assets and to become aware of any credits not yet collected, or debts not yet honoured by the deceased (*de cuius*); precisely for this reason, the ledger could often accept additional notes, such as the dates of stipulation of notarial deeds or even the dates of birth and death of people close to the entrepreneur, given the lack of civil status at that time and the inefficiencies and delays related to the updating of parish registers. The preservation times of the “Libro Grande” were therefore medium-long, sometimes they accompanied the owner of the company until his death.

Once these aspects have been clarified, and as mentioned in the introduction, the archival documentation used to support this survey consists of the accounting entries for the company of one of the major exponents of mercantile circles of Ragusa in the mid-sixteenth century, Vincenzo Stefani, whose entrepreneurial activity is quite complex. His economic interests mainly concerned the merchant sector - in particular trade in cereals, wine, spices, cotton, linen and textiles -, while the main markets were represented by important centres in Marche, Abruzzo, Apulia, Sicily, Campania, Tuscany and East<sup>9</sup>. Of a certain importance was also its presence in the shipowning field, testified by the possession of shares in various boats. He, in fact, held some carats of the ship Santa Nunciata, of Santa Maria di Bissone and of Santa Maria dell’Annunziata (Tenenti and Tenenti, 1985, 54). He also held shares in Santa Trinità and in Santa Caterina, in co-ownership with Stefano Di Rusco. The ownership of ships, however, was an investment instrumental to a commercial strategy in which the ship played a secondary role. Vincenzo Stefani also owned some land properties, of which a share of at least 5.700 Neapolitan ducats in the company of Naples, with Francesco Antonio Marini and Giovanni Maria Sagri, and had shares in other companies with Paolo Pieriz, Antonio Medo and Stefano di Rusco (Tenenti and Tenenti, 1985, 197).

Stefani’s company accounts included a journal book, a ledger, a column, a white book used to report all accounts expressed in foreign currency, a green book and a “menuto” book<sup>10</sup>. The

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<sup>8</sup> For further details, see the work of the Ragusan Cotrugli (1990) and Pacioli (1494).

<sup>9</sup> His intense mercantile activity is also testified by the relationships he had with a Dubrovnik maritime operator, Silvestro di Francesco Tutolini, actively engaged in long distance traffic, and with the shipowner Francesco di Marino Radulovich (Tenenti and Tenenti, 1985, 30-32 and 54).

<sup>10</sup> DAD, XIX, *Privata*, 7/a, cc. 12a and 118a.

ledger, in particular, contains the recordings made in the period between 1555 and 1572<sup>11</sup>. The register, drawn up by hand on parchment paper according to the Italian language in use at the time (the vernacular), consists of 383 cards in which are reported the costs and the earnings, and credit and debit relationships<sup>12</sup>. Using this documentation, the survey that is the subject of these pages aims to focus attention on the findings concerning the insurance business. Thus, for example, are analyzed the accounts opened with the Sureties, Ships, Profit and Commissions, as well as the files headed to the various economic operators with whom Vincenzo Stefani was in business. From a subjective point of view, the master accounts provide important information on the people insured by Stefani and on those for whom he carried out intermediation services. From an objective point of view, however, there are several elements of fundamental importance, such as the amounts guaranteed, rates, premiums paid or collected, damages paid or reimbursed and commissions. The accounting analysis also shows the profile of a person who appears to be very active in the insurance field, sometimes taking on the role of insurer, sometimes of insured and, finally, of medial or median of security<sup>13</sup>. In this respect, is emblematic the figure of Vincenzo Stefani, since it lends itself to impersonating the various roles that the merchant of the time could play. His involvement in the insurance sector, in fact, was part of the more general activity of merchant and shipowner. In fact, in Ragusa the insurer did not appear to be a professional figure in his own right. Insurers were, usually, economic operators, businessmen, professionals, nobles who included this activity among the others to which they devoted themselves primarily. Often, however, it was the need to reduce the risks of navigation that prompted many of these people to take on the role of insured. Finally, the close relations they had with business partners also justified the exercise of the activity of intermediation.

#### 4. The insurance business of the Stefani company

The analysis of the accounting records on the insurance business of Vincenzo Stefani has ascertained more than 200 registrations. The records refer to various company operations in which Stefani is mainly an insurer or insured and, to a lesser extent, an intermediary. The total number of registrations also includes those relating to the settlement of claims<sup>14</sup>. Overall, about 160 insurance commitments were identified, for a value of more than 4.000 ducats. This figure, if considered as a whole, does not express much but, if broken down appropriately, provides important elements for evaluation. The detailed analysis of premiums, in fact, allows us to understand the insurance behavior of Vincenzo Stefani towards some merchants with whom he had privileged relations, as well as to evaluate other aspects, such as those relating to the danger of travel. To this end, the amount of premiums collected was grouped together in separate accounts in the name of each insured person. An analysis of the accounting results shows that,

<sup>11</sup> In addition, a policy was taken out by Vincenzo Stefani on 12 November 1568. It is an act that provides for the insurance coverage of a ship and the goods transported, for a period of six months, which includes 28 insurers. DAD, *Diversa Cancellariae*, vol. 1568-1571, cc. 39-40.

<sup>12</sup> The unit of account used was the ducat of Ragusa, accompanied by two submultiples: the “grosso” (1/40 of the ducat) and the “follaro” (1/30 of the “grosso”). In some writings, however, the values were also expressed in different monetary units, such as the Ragusan “scudo” (9/10 of the ducat), particularly used in insurance operations (Pierucci, 2000, 52-64).

<sup>13</sup> In this case, it was a matter of connecting the insured and the insurers to facilitate the conclusion of the policy. The role and functions of the medial or medial security broker varied according to the customs and traditions in force in each square and according to the rules governing the institution. About insurance agents, Ceccarelli (2012).

<sup>14</sup> For the years following the period covered by the ledger, Vincenzo Stefani appears as an insurer 25 times in 1574, 5 in 1575, 16 in 1585 and 11 in 1586. The total amounts underwritten in these four years amount to 3.703 “scudi”, 2.467 ducats and 1.400 tolar (Tenenti and Tenenti, 1985, 197-198).

out of about 90 policyholders, only four take a leading position. These are the merchants Pasquale Matulini, whose amount of premiums paid was about 1.450 ducats, Giovanni Pasquale Rusco (425 ducats), Tommaso Stefani (400 ducats) and Giovanni Allegretti (125 ducats). With regard to the other insured, the values are much lower, ranging from a minimum of 0,27 ducats to a maximum of 99 ducats. The distribution of premiums shows that Vincenzo Stefani's insurance business was mainly aimed at certain operators with whom he had solid economic and financial relations<sup>15</sup>.

But what was the way in which our merchant-entrepreneur operated? To understand the main characteristics of the insurance relationship, it is appropriate to consider the commitments made in the contract. If we consider, for example, the values referred to the ship-owner Pasquale Matulini, it is easy to see that the average sum insured ranged from a minimum of 1.000 to a maximum of 1.800 "scudi", and that the same was always referred to security on the ship. Altogether, there are about 20 records, mostly made in the period between 1557 and 1564. There follows a period in which there are no insurance acts, probably due to an interruption of business relations, given that the last three security were concluded one in 1567 and two in 1572<sup>16</sup>. On the other hand, considering relations with the insured Giovanni Pasquale Rusco, it is noted that the amount of the premiums collected related to four policies, of which two had an insured value of 4.000 and 3.000 "scudi"<sup>17</sup>, respectively, while the remaining two covered the Sum of 150 and 320 "scudi"<sup>18</sup>. These two examples show that the total premiums received did not depend on the frequency of insurance relationships, but on the size of the sums insured in the policy<sup>19</sup>.

Vincenzo Stefani's activity was not limited to guaranteeing the risks on the ship, but extended to other forms of cover, such as that on credits he had with some operators (Tenenti and Tenenti, 1985, 59). On an insurance level, he often acted together with Paolo Marino Gozze. In 1581, as we know, they were in business and among the various shops that carried out in the company there was also the maritime insurance (Tenenti and Tenenti, 1985, 178-179). Examining the total of the premiums collected on an annual basis, it can be observed that, sometimes, the values recorded were subject to strong fluctuations. The annual awards went from around 200 ducats, in the years 1558-1561, to 400 ducats in 1564, to then record the lowest values in 1567, with less than 30 ducats, and go up again, the following year, to about 570 ducats. This is followed by a period in which the awards stood at around 250/300 ducats, to then reach the maximum, in 1572, with more than 600 ducats<sup>20</sup>.

In view of the income from insurance premiums, it is possible to know the disbursements made by Stefani as indemnity, in the event of the occurrence of certain claims<sup>21</sup>. Accounting

<sup>15</sup> It should be noted, for example, the fairly regular presence of Vincenzo Stefani among the insurers of Martoliza, Drago and Cerva (Tenenti and Tenenti, 1985, 141).

<sup>16</sup> DAD, XIX, *Privata*, cc. 257 and 375.

<sup>17</sup> *Ibid.*, cc. 268 and 317.

<sup>18</sup> *Ibid.*, c. 378.

<sup>19</sup> In this regard, it should be remembered that in Ragusa it was customary to cover 50% of the monetary value of the boat. So, for example, in February 1576 Vincenzo Stefani accepted that his ship Santa Caterina, estimated at 10.000 "scudi", was insured for 5.000 "scudi" (Tenenti and Tenenti, 1985, 158).

<sup>20</sup> DAD, XIX, *Privata*, 7/a (1555-1572).

<sup>21</sup> The ways and times of compensation are not always understandable. This is the case, for example, of the shipwreck of the ship Santa Maria di Bissone, captain Giovanni di Vincenzo Batoli, after which damage was estimated at 60%. In this circumstance, if it is certain that the reimbursements began two years later, rather than after the few months contractually provided for - and it is certain that Vincenzo Stefani as insurer paid only 15%, unlike seven other insurers who refunded 60% and one who reimbursed 40% -, not so clear are the reasons for the obvious disparities in the extent of refunds. According to Alberto Tenenti and Branislava Tenenti, it is to be assumed that some operations of adjustment had intervened between the interested parties outside the notarial



records for this type of operation are limited in number, there are less than ten, while monetary outflows account for about 11% of insurance premium income. If, therefore, the revenues referred to the management of this type of activity amounted to more than 4.000 ducats and the costs, represented by the amounts paid for accidents at sea, amounted to about 450 ducats, it can be deduced that, in the period considered, the gain created for the activity of insurer it was around 3.550 ducats. This is a significant sum that confirms that in Ragusa market, in the mid-sixteenth century, investments in the insurance sector were quite profitable<sup>22</sup>.

Particular attention should be paid to the analysis of risk variables, itineraries and rates (expression of the greater or lesser danger recognized by the insurer to the nature of the trip). As is well known, there were many factors that contributed to determining the price of the insurance, among which the greatest is undoubtedly the degree of threat and danger that could derive from human elements and in particular from the presence, aggressiveness and power of corsair ships (Tenenti, 1997, p. 130). In addition, it was necessary to consider the type of boat, the armament, the competence of the captain and his crew. It was also necessary to assess the risks associated with the itinerary, the duration of the voyage, the presence of war conflicts and the period of the year in which the navigation took place. It is not excluded, however, that in Ragusa there was an extensive network of references that, combined with the personal experience of insurers, was a useful tool in setting the premium (Tenenti and Tenenti, 1985, 69).

The accounting documentation analyzed allows us to grasp some valuable aspects of the variables that influenced the insurance behavior of Vincenzo Stefani. With reference to time insurance<sup>23</sup>, it can be noted that, in almost all cases, the policy was stipulated for the duration of six months, while the type of boat that was covered by insurance -except for a few galleons and one “saettia” - was the ship (Tenenti and Tenenti, 1985, 95). Sometimes, the latter term was followed by the adjective small, large, large, old, new, to indicate the technical characteristics and the state of use of the boat<sup>24</sup>. However named, the merchant unit which is the subject of the contract does not seem to have had a decisive influence on the valuations of the Dubrovnik merchant and the size of the premium. Undoubtedly, the trend in rates over time is more representative. An examination of the values recorded in the accounting records shows, in the years 1557 to 1567, variations between 5% and 7%, while from the second half of 1568 to 1572, the rate was around 8%<sup>25</sup>. In the case of temporary security, with the exception of risks related to privateering and piracy, the variables that, more than others, seem to affect in determining the award are the duration of the contract and, secondarily, the seasonal component. As far as travel insurance is concerned, the insurance commitments concern almost exclusively the last three years to which the documentation refers, i.e. the period from 1570 to

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registration (Tenenti and Tenenti, 1985, 297).

<sup>22</sup> For the late medieval age, of interest is the testimony of F. Melis. According to the illustrious Florentine scholar, of the many “security” accounts presented only one, that of Giovan Battista di Bernardino Borghesi, working in Rome, ends with a loss (Melis, 1975, XXVI). This reading on the economic convenience of investing in maritime insurance is, however, denied by a testimony by Francesco di Marco Datini of Prato. The latter, who often took on different roles as an insured and insurer, and who wanted his goods to always travel insured, complained of having lost in one go what he had earned in several operations (De Simone, 2011, 17).

<sup>23</sup> In the market of Ragusa «furono molto frequenti le assicurazioni *ad tempus*. I vascelli ragusei infatti circolavano sovente per trasportare merci di altri porti e prodotti che non partivano dalla loro città di origine o non appartenevano ai suoi operatori economici. Per gli armatori e gli altri interessati era quindi assai naturale contrarre, e poi successivamente rinnovare e prolungare, sicurtà *ad tempus*, in modo che le loro unità fossero libere di dirigersi, una volta assicurate in tal modo, dove le opportunità economiche migliori le conducessero» (Tenenti, 1997, 142).

<sup>24</sup> DAD, *Privata*, 7/a, cc. 207, 275, 303, 358 and 378.

<sup>25</sup> An exception is a policy on a “saettia” which was stipulated at the rate of 12%. *Ibid.*, c. 378.

1572. In this period of time there is an increase in the activities of Vincenzo Stefani, who also endorses an appreciable number of security per trip. It is probable that the insurance cover in time concerned businessmen with whom there were close relationships of collaboration, while that offered for an occasional trip was aimed at occasional operators. Finally, it should not be overlooked that in those years the risks of navigation were higher due to the conflict that culminated in the battle of Lepanto.

The main routes that are covered by marine insurance are the Adriatic ones. The most insured itinerary has Ragusa as its starting point and destination Ancona. In fact, about 40% of the subscriptions concern this stretch of sea. Less frequent are the policies on travel from Ragusa to Venice, amounting to about 16%<sup>26</sup>. Follow those with destination Sicily, Alessandria, Puglia, Spain, the Balearics and Naples. Finally, the certainties that have as their departure port important maritime centers, such as Venice, Livorno, Constantinople, and as a destination Ragusa are of some interest. The insured merchant units are, in order: the ship, the shuttle, the vessel, the galleon, the boat, the canal, the brigantine, the schirazzo, the marciliana and the caramussal<sup>27</sup>. As for rates, on the Ragusa-Ancona route the fluctuations are quite limited, being between 2,5% and 4%. Even for direct journeys to Sicily the rates follow the percentages just remembered, while for those of return - and they were not many - there is some anomaly, because, if for a security of 1571 the rate is of 4%, a year later, for the same insurance, is equal to 7%. Ragusa-Venice trips discount 4%. The values referring to other routes, on the other hand, are higher, such as Flanders-Ragusa and London-Ragusa, which often stand at around 15%, a clear sign of the influence of distance in determining the premium<sup>28</sup>. The rates on the Constantinople-Ragusa and Constantinople-Livorno or Constantinople-Venice routes are lower, ranging from 7% to 9%<sup>29</sup>. With reference to the elements considered, it can be argued that the insurance intervention in travel policies was conditioned not so much by the type of boat, but by the itinerary and the risk factors connected to it.

After tracing the insurer's profile, the focus shifts to operations related to insurance claims. There is no doubt that Vincenzo Stefani used insurance to cover himself against any sea accidents. This, of course, depended on its perception of the risk with respect to the greater or lesser danger of travel. In fact, most of the policies stipulated concerned certain routes and certain periods of the year. The analysis of the premiums paid by Stefani for passive insurance, and of the amounts received as compensation for damage, allows us to calculate the profit or loss of the insurance management. From the comparison between the premiums collected (net of the compensations paid) and the premiums paid (net of the compensation received) it is possible to determine the economic result of the sector referred to the period considered. Data on passive insurance cover approximately 12 years, between 1561 and 1572, in which, compared to 36 operations, the total expenses amounted to around 3.000 ducats. As for the distribution on an annual basis, it can be noted that the total of the premiums varies from a

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<sup>26</sup> On maritime and commercial relations between the main Adriatic ports, please refer to Anselmi (1969). For a historiographical balance sheet on seafaring and maritime trade in Ragusa between the Middle Ages and the Modern Age, see Di Vittorio (2001).

<sup>27</sup> An in-depth analysis of the role of the ship in the insurance field and the characteristics of the Dubrovnik merchant fleet in the second half of the sixteenth century, is in Tenenti and Tenenti (1985, 43-62).

<sup>28</sup> Analysing the rates charged on this route during the "Atlantic" period, it can be seen that, with the exception of a security in January 1522, when the rate applied was 20%, 15% was undoubtedly above the premiums charged on this route, which was 12% (Di Vittorio, 2001, 26).

<sup>29</sup> In this regard, there are two significant trips from Ragusa to Alessandria, made three months apart, the first of which was insured at the rate of 7% and the second at 15,5%. Although these are isolated cases, not suitable to support theses of a general nature, these examples help to understand how the attitude that Vincenzo Stefani assumed as an insurer could sometimes prove difficult to understand.

minimum of 90 ducats, in 1566, to a maximum of about 400 ducats, in the years 1561 and 1572<sup>30</sup>. However, it is not possible to observe a uniform behavior of our operator from the series of data collected, since the use of the insurance instrument also depended on other factors that were not always identifiable.

As for the type of security, the prevalence of policies regarding the insurance of the boat is noted. In fact, Stefani claimed insurance costs to guarantee, on a half-yearly basis, the ownership quotas on the ships mentioned above. In the accounting documentation, among the recalled boats, emerges the Santa Caterina, insured for sums ranging from 375 to 2.035 “scudi”. The rates applied, on the other hand, range between 5% and 8%, with the sole exception of the deed stipulated in July 1569, in which the premium is set at 9%<sup>31</sup>. Of 36 operations, all related to security at the time, 30 concerned Santa Caterina. Also, in monetary terms, the insured values were much higher than those of the other ships. It is probable, therefore, that the ship most used by Stefani in the course of maritime traffic was the Santa Caterina.

The costs incurred to secure the ownership shares of the various merchant units are offset by the revenues from the indemnities obtained in the same period<sup>32</sup>. About this, five entries have been identified that show the sums reimbursed to Vincenzo Stefani for accidents that occurred mainly at Santa Caterina. The book values show that the amount of compensation is quite limited compared to the sums insured, just over 8% of the premiums<sup>33</sup>. Finally, comparing the positive components of income with the negative ones, it can be seen that the insurance management provided Stefani with a net profit of about 750 ducats. This economic result certainly rewarded his operational choices. In reality, by participating in the shop as an insurer and insured, he not only made a profit in monetary terms, but managed to guarantee himself, at no additional cost, from any sea accidents.

Lastly, by analyzing the sensory activity, it is possible to grasp the type of bond that Vincenzo Stefani had with some businessmen. In the city-state of Ragusa, the role played as broker of security, consisted mainly in putting insured and insurers in contact, in order to promote the conclusion of the contract, by the payment of a fee. Thanks to this activity, to be considered however marginal compared to the others, Stefani was able to increase his income through commissions, which were usually applied in the measure of 5% of the insured value. The exercise of the intermediation can be seen from the accounting records, which show the names of those on behalf of whom Stefani promoted the conclusion of the policy. It should be noted that many brokers were often insured by Stefani himself. Circumstance, the latter, which would confirm the completely complementary nature of the brokerage activity, carried out on the basis of the commercial collaboration relations that he had with merchants from Ragusa, Florence, Naples and Genoa. The number of transactions relating to insurance brokerage services, recorded between 1564 and 1572, is about 60, while the sums received for this type of service are just over 90 ducats, compared to an insured value of about 2.200 “scudi”. Furthermore, from the examination of the accounts dedicated to brokers shows that the activity in question was provided in favour of operators who, at times, also appeared as insurers. The names of the Neapolitans Pasquale Matulini, Giovanni Giacomo Pavese and Pietro Battista

<sup>30</sup> DAD, XIX, *Privata*, 7/a (1555-1572).

<sup>31</sup> *Ibid.*

<sup>32</sup> This aspect of maritime insurance is not easy to understand because of the different versions and interpretations of the accident that were provided. When no agreement was reached between the parties concerned, there were basically two ways forward: arbitration (widely used in the commercial world) and the civil courts. In Ragusa, these appeals were relatively numerous and showed a far from easy relationship between the insured and the insurers. Vincenzo Stefani also has a case of arbitration appeal to resolve a dispute arising from a contract signed in 1559, which ended with compensation equal to 60% (Tenenti and Tenenti, 1985, 285).

<sup>33</sup> DAD, XIX, *Privata*, 7/a (1555-1572).

Ferrero, the Florentines Giorgio and Cosimo Batoli, and the Dubrovnik Paolo Gozze stand out for their frequency. For the significant sums guaranteed, we must also mention the Genoese Nicoloso Lomellino and the Ragusan Tommaso di Francesco Stefani. The object of the maritime insurance was almost always constituted by the ship. As for the rates charged, except for few isolated cases, there were percentages of 8%, while the guaranteed sum varied according to the value of the boat.

## 5. Conclusion

From the attempt to reconstruct the insurance profile of Vincenzo Stefani, through the accounting records, it can be seen how the maritime insurance system in the Republic of Ragusa consisted of a set of variable elements, evaluated by individual operators for different reasons, depending on the greater or less risk sensitivity and traffic hazard. For these reasons, in the second half of the sixteenth century, maritime insurance appeared as a flexible tool, in relation to a series of objective and subjective factors.

From what has emerged, there is no doubt that the accounting source can contribute to widen the knowledge on this important financial activity and allow to outline in a more exhaustive way the profile of those who participated. One of the most interesting aspects that emerges from the research is, moreover, the dense network of economic and financial relations between those who asked for insurance coverage and those who acquired the risk. Finally, through the analysis of the accounts referable to the insurance activities, the survey wanted to demonstrate that a quantitative analysis of the profits and losses deriving from these activities is possible, but only if appropriate documentation is available.

In conclusion, the intent to prove how the understanding of the sixteenth-century insurance dynamics, and above all of the results of the characteristic management, can be favored by the use of the accounting sources, certainly raises a series of questions that deserve further investigations.

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