

MECHANISMS AND CRITERIA OF COOPERATION IN TRADING NETWORKS OF THE FIRST GLOBAL AGE

The case study of Simon Ruiz network,
1557-1597

by

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Abstract

Mechanisms and criteria of cooperation in trading networks of the first Global Age. The case study of Simon Ruiz network, 1557-1606.

by Ana Sofia Vieira Ribeiro

Cooperation is an essential behavior in human society. It presumes that people gather efforts to obtain a benefit at a minimum cost, even with different goals and with different motivations. This kind of behavior acquires a specific frame in connection with trade and financial markets and networks, in the present or in the past. This dissertation focuses in the study of the mechanisms and criteria of cooperation in those trade networks, in a wide sense, in the sixteenth century, through the case study of the New Christian Castilian merchant Simon Ruiz. His business affairs were extended throughout all Europe and some Portuguese and Spanish colonial spaces. For this purpose, letters of exchange and commercial correspondence, kept in the archive of his company are the main primary sources to check four different hypothesis: 1) The dynamics of cooperation in a certain historical network, besides conditioned by issues of economic and political conjuncture, are related with intangible factors, as trust, reputation, gossip or risk. 2) Trading networks had a dynamic lifecycle, they arise, change and finish according to their own dynamics and pressured by contextual circumstances. 3) Partners in trade have the tendency to be more punitive regarding the breakdown of norms created by the functioning of the network. 4) The endogamy and kinship of an economic and financial network in the 16th century was limitative, since merchants and bankers were obliged to find partners outside the initial, familiar and ethnic network of cooperative contacts for their social and economic survival.

Key words: cooperation, trading networks, trust, reputation

A cooperação é um comportamento essencial na sociedade humana, de acordo com o qual as pessoas unem esforços para obter um benefício a um custo mínimo, mesmo tendo objetivos e motivações diferentes. Esse tipo de comportamento ganha formas específicas em redes de comércio e em mercados financeiros, no presente ou no passado. Esta dissertação pretende focalizar a atenção no estudo dos mecanismos e critérios de cooperação neste tipo de redes, no século XVI, através de um estudo de caso: o do cristão-novo castelhano Simon Ruiz, cuja actividade se estendeu por toda a Europa e nalguns espaços

coloniais de Portugal e Espanha. Para este propósito, letras de câmbio e correspondência comercial de sua empresa são as principais fontes primárias para testar quatro hipóteses diferentes: 1) A dinâmica da cooperação numa determinada rede histórica, além de condicionada por questões de conjuntura económica e política, estava relacionados com factores intangíveis, como a confiança, a reputação, o boato, ou o risco. 2) As redes de negócio tinham um ciclo de vida dinâmico: elas surgem, alteram-se e terminam de acordo com a sua própria dinâmica e pressionados por circunstâncias contextuais. 3) Os parceiros comerciais têm a tendência a ser mais punitivos em relação à quebra das normas criadas pelo funcionamento da rede. 4) A endogamia familiar e étnica de uma rede económica e financeira no século XVI era limitativa.

Palavras-chave: cooperação, redes comerciais, confiança, reputação

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NETWORK ANALYSIS VOCABULARY (from Wikipedia http://en.wikipedia.org/wiki/Social_network):

Average connectivity – The average of the total number of links established per node in a network.

Betweenness - The extent to which a node lies between other nodes in the network. This measure takes into account the connectivity of the node's neighbors, giving a higher value for nodes which bridge clusters. The measure reflects the number of people who a person is connecting indirectly through their direct links

Bridge - An edge is said to be a bridge if deleting it would cause its endpoints to lie in different components of a graph.

Clustering coefficient - A measure of the likelihood that two associates of a node are associates themselves.

Degree - The count of the number of ties to other actors in the network. In directed graphs, degree can measure links which are originated from the node x and links which reaches node x.

Density - The degree a respondent's ties know one another/ proportion of ties among an individual's nominees. Network or global-level density is the proportion of ties in a network relative to the total number possible (sparse versus dense networks).

Path length - The distances between pairs of nodes in the network. Average path-length is the average of these distances between all pairs of nodes.

ACRONYMS AND ABBREVIATIONS

ASR – Archivo Simon Ruiz

DyncoopNet - Dynamic Complexity of Cooperation-Based Self-Organising Networks in the First Global Age

DyncoopNet-pt – Portuguese DyncoopNet's team

f. e. – for example

fig. - figure

nr. – number

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0. INTRODUCTION

'Trade lives from these scales, encounters and connections which multiply themselves by their own (...)'¹.

- Fernand Braudel

In 1979, Fernand Braudel describes trade in the Early Modern World as a human activity which covered the world full of trading places: 'In each crossroad, in each scale, one imagines a merchant, established or passing by. And his role is determined by his position'(BRAUDEL 1985, 129). By 'his position', the author meant not only the merchant's geographical position, but also his position in a trade and/or financial network, which connected a certain number of agents, belonging or not to the same company.

For the most efficient functioning of these trade networks in the Early Modern Period, cooperation emerged as a mean to fulfill trade and finance agents' needs and of gathering efforts to accomplish complex tasks (BENN 1977, 279). In the sixteenth century, trade was guaranteed by direct, dyadic interactions between agents, even between strangers in a one-off interaction.

The main subject of this dissertation is the study of cooperation mechanisms and criteria in trade networks in the Early Modern Period, centered in the case study of Simon Ruiz network, between 1553 and 1597. By one hand, we will consider the ways by which cooperation emerged and evolved, on the other hand, we will questions attributes to the partner's choice, i. e., the selection and exclusion of different agents to/from one's relations, '[...] on the basis of intrinsic attributes of the partner itself and choice on the basis of characteristics of the commodity offered by the partner', each of whom is aware of his and the other's market value (NOË 2006, 225, 234).

Historical knowledge has been neglecting the topic of cooperation as a research theme, at least in economic History. For the last decades, sciences such as Biology, Economy, Psychology, Mathematics or Physics have been developing empirical and theoretical research on cooperative behavior, not only in humans, but also in animals and plants. Their results and modeling have captured recent historiographic attention to this topic, as showed ahead in this introduction.

This dissertation is one of the final outputs of the research project *Dyncoopnet - Dynamic Complexity of Cooperation-Based Self-Organising Networks in the First Global Age*, co-directed by Ana Crespo Solana (Consejo Superior de Investigaciones Cientificas) and Jack Owens (Idaho University). Three different national research teams – American, Spanish and Portuguese – united under a multidisciplinary framework, answered the 2007 call for proposals of the European

¹ (BRAUDEL 1985, 130).

Science Foundation's programs – The Evolution of Cooperation and Trading (TECT), oriented to promote inquiries related with the study of cooperation. History was not one of the main fields of cooperation studies mentioned². Nonetheless, the central aim of DyncoopNet, as an international Collaborative Research Project (CPR) was to examine the evolution of cooperation among merchants and between merchants and other groups, during the first global age (1400-1800), in order to produce useful and new empirical generalizations and theoretical insights about human cooperation and economic change (PINTO 2008).

The Portuguese team (Dyncoopnet-pt)³, under the coordination of Professor Amélia Polónia, has conceived a subproject centered in a Castilian merchant's business network, operating in the second half of the sixteenth and first decades of the seventeenth centuries. One of the reasons of this choice was the fact that this was a particular active period in the international trade and finance evolutionary trends, in which merchants enriched and added intellectual and social value to themselves and their social and economic environment. The financial organizations reached the level of the European States, big international trade companies interfered with the overall financial sphere of influence, assuming roles of supplying goods and credit to States and Crowns. In this sense, through their economic practice, they mixed business strategies with political affairs (JEANNIN 1986, 7, 8). In a transnational scale, business opportunities were multiplied and thickened throughout the sixteenth century. Important individual merchants and private trade companies were impelled to build networks of business contacts, in a global geography, in order to obtain extra profits, in a world where more and more individuals tried to create wealth with performances in new trading markets.

Conceived within the framework of DynCoopNet and pursuing similar goals, the challenge of the current research is to apply to historical studies of cooperation interdisciplinary concepts and methodologies, never leaving behind the specific and specialized scientific reasoning of History. Researching complex human realities, such as trade networks involving multiple spaces and agents, is indeed incompatible with ferocious academic specialization frontiers. Even if a complete portrait of a past reality is impossible, adopting other sciences concepts and being receptive to their methodological tools can derive in innovative insights on

² 'Cooperation between disciplines concerning the study of cooperation. A number of disciplines have adopted a common theoretical framework for explaining biological and cultural evolution that emphasizes the properties of interacting, goal-directed agents, e. g. behavioral economics, evolutionary game theory in political science and economics, evolutionary approaches in cognitive and social psychology and neuroscience, replicator chemistry, population dynamic accounts of cultural evolution within anthropology, and the continued importance of evolution in our understanding of cooperative relationships. Multidisciplinary research into «cooperation» has become both possible and potentially profitable for the first time. The theoretical convergence allows researchers from a wide range of disciplines to discuss cooperation in a common scientific idiom.' (FOUNDATION 2006).

³ To check the contents of the Portuguese team work please check www.dyncoopnet-pt.org.

traditional or new research subjects on each domain of scientific specialization, including History, and point to new interpretative models of reality.

In the case of this PhD dissertation, the aim is to reconstruct economic behavioral dynamics. Looking to the available knowledge produced by an extended range of sciences has been fundamental to understand the engagements of our protagonists, the merchant banker Simon Ruiz, and the choices of his company. Side by side with those who had high social status, as the aristocracy and the high clergy, these men were at the vortex of a large based pyramid. Allying the constant tension to beat distances, to the extraction of benefit from the different rhythms of available merchandise and to the traps of every sort, these were central protagonists in the Early Modern stages (TENENTI 1991, 155).

Simon Ruiz and his trade company seemed to be an excellent case study, as a brief biography can prove. He was born in the Castilian village of Belorado, between 1525 and 1526, in a family of small wool traders. He began his commercial activity around the age of 25, by the mid 16th century, as an agent of Yvon Roncaz from Nantes, in the trade of textiles in Medina del Campo fairs. These fairs were considered neuralgic points in the circulation of people, goods and credit (BRAUDEL 1985, 502; CASADO ALONSO 2001, 502), encouraging Ruiz to participate in successive trade partnerships, being the first ones those engaged with Juan de Orbea, treasurer of Aragon, his brother André Ruiz in Nantes and Ochoa Lanier in Bilbao (LAPEYRE 1955, 60-62). Trying to improve his profits in his olive oil, spices, indigo, salt and wheat commercial activity, Simon Ruiz started to place trustworthy agents in vital geographical places to his business. He also fostered an informers' network in places with international relevance in the world of trade and finance – Lisbon, Genoa, Rouen, Rome, Venice or Lyon (GONZALEZ TORGA 2005; CASADO ALONSO 2008, 54).

The importance of Simon Ruiz Company did not include exclusively trade. Medina del Campo was also a relevant exchange place and the merchant soon became a banker. Between 1576 and 1588 he was one of the main creditors and *asientista* of the Spanish king, Philippe II. In general, this man satisfied the portrait of the merchant banker from the 16th century. His documents describe cooperative trade relationships, casuistic or persistent. On the other side, they show how an agents' social network was built. His partners were his representatives, collaborators or informants who, in a truly dynamic sense, present relations and economic behaviors which evolved in time.

Simon Ruiz's key role in fundamental economic places in the European economy, in the beginning of the First Global Age transformed him in a reference, not only in the Iberia Peninsula, but also in the rest of Europe. In this sense, the potential amplitude of his business network, the

variety and heterogeneity of his partners justified the DyncoopNet-pt choice of Simon Ruiz trade and financial network as a representative case study of the mechanisms of cooperation in the second half of the 16th century, even if the activity of his company persisted after his death in 1597, until the first decade of the 17th century, under the leadership of his nephew Cosme Ruiz Embito. Besides, Simon Ruiz, the protagonist of this saga and diachronic evolution that we intend to report, seems like someone with a hybrid confessional identity. Castilian historiography has discussed this, considering him sometimes as New Christian, sometimes old Christian⁴, since it is difficult to see how his case would be considered at the time. Simon Ruiz is a descendant of a Castilian Jewish family, forced to convert long before the reign of the Catholic Monarchs during the actions taken by Henry II from the *Trastámara* dynasty, in the late fourteenth century (massacres of 1391).

This PhD thesis proposes to focus specifically on the analysis of the evolutionary criteria of network constitution, including inclusion and exclusion patterns, and the identification of key-trade mechanisms of cooperation in the Early Modern Age.

The dissertation is composed by three main chapters, subdivided in specific items. In the first one, *Theoretical and methodological guidelines* we develop the theoretical framework that sustains the research plan of this dissertation. First, we present a balance on what has been done in different disciplinary fields, which acknowledgement is fundamental for the elaboration of this dissertation. We establish research questions and hypothesis to test and conceptual options to best answer them. In this first chapter, we also explain the empirical and methodological options.

In *Diachronic evolution of Simon Ruiz network and partner choice criteria (1553-1597)* one combines the diachronic evolution of the business network of Simon Ruiz, under taken according to the methodology of network analysis, and the partner choice criteria involved in the agents' inclusion and exclusion process. The evolution of Ruiz's network is divided in seven different periods. In each one we argue how contextual historical events and cycles (political, military, religious or economic) influenced the topology, dimension, connectivity and hierarchy of the network. The selection criteria of agents under those circumstances are also targeted. For this purpose, information on individual attributes as nationality, religious affiliation, job, titles or settlement places were taken as key-elements on the guidance of network evolution.

⁴ Cantera Burgos refers these cases as Old Christians, underlying the case of the Maluendas and the Salamancas, who, after the forced conversion, occupied relevant ecclesiastical functions and achieved important positions in the Court and in the aristocracy (CANTERA BURGOS 1952). This deduction doesn't seem so obvious, since the option for occupying these positions was assumed as a strategy for social climbing and integration and imitation mechanisms in the elites. Merchants and bankers in the Early Modern times frequently aspired belonging to the national aristocracy, independent from their religious background, as is demonstrated in several individual lifestories presented in *Mercadores e gente de trato* (ALMEIDA 2009).

The third chapter, *Mechanisms of Cooperation*, is divided in three smaller parts. The first, *Endogamic connections within Simon Ruiz network*, tries to verify endogamic trends in Simon Ruiz Network. The first sub-chapter seeks to discuss kin endogamy, i.e., if a business network such as the one in study had a heavy familiar background, regarding the number of partners, and which was the relative importance and weight they had in the network performance. We try not only to verify the trend of a familiar company's organization and agency, supported by classical historical evidences, but also to check the relevance of Granovetter's weak and strong ties theory and the application of Kokko's principle of «group augmentation». Other subchapters discuss the confessional and national endogamic character of Simon Ruiz network.

The following part, *Levels and mechanisms of economic cooperation and competition between Simon Ruiz and agents in Portugal, 1557-1580*, verses on cooperative ties, in positive and negative levels. It tries to observe the contents of warning and collaboration relationships, but also to analyze how agents defect and cheat former cooperators. We seek to understand the effects of these negative episodes in the sustenance and evolution of cooperation relationships. According to the interdisciplinary knowledge on mechanisms of cooperation, we tried to classify these agents' behavior and to understand the prevalence of certain mechanisms and cooperation strategies.

Finally, *Trust and distrust*, tries to measure the weight of evident trust and suspicion relationships in the overall network and how they were related with the establishment of cooperative ties between merchants, which were dependent from specific individual attributes. We also tried to measure positive and negative reputation and how gossip functioned within the network. Finally, we observe the effects of rumor spreading in the network and how it influenced decision-making and the processes of inclusion or exclusion of agents in the network.

I. Theoretical and methodological guidelines

In this chapter, we will try to elaborate a solid theoretical insight on the scope of this interdisciplinary research project, regarding cooperation dynamics in Simon Ruiz network. For that purpose, we would like to present a balance on the diverse scientific approaches to the problem of cooperation in Early Modern Age. Different theoretical insights will be considered in order to sustain hypothesis and research questions. Empirical historical work will be circumscribed in terms of space and time. Criteria choice of data sources and the methodological approach will be presented.

1. A multidisciplinary approach: the research on the issue of cooperation in merchant networks in the 16th and 17th centuries

To evaluate what is the state of research in cooperation in merchant networks in the 1500s, the research plan dedicated attention to studies on cooperation undertaken by different disciplinary approaches. Trust, reputation and risk, as well as sustaining economic theories on agency problems and organization of cooperative relations between enterprises were some of the topics targeted. On the other hand, regarding different methodological approaches social network analysis and agent-based theory were included in the bibliographic research. Regarding historiography, we tried to appraise what has been done regarding merchants, finance and trade activities and markets in the sixteenth century, as well as methodologies and perspectives on Early Modern merchant networks, giving special attention to the bibliography about Simon Ruiz and his connections. Sixteenth century social, economic and political conjuncture could not be forgotten, namely regarding Iberian history.

1.1 Cooperation – mechanisms and conditions for emergence

For someone with an historical academic education background, it is difficult to control the history of research in such different disciplines as mathematics, physics, biology or economics. In the paragraphs bellow we will try to resume the general lines in the study of cooperation, assuming the defaults and lack of exhaustive knowledge.

In 1902, Petr Kropotkin argued that cooperation will evolve more often than competition. Kropotkin's book, *Mutual Aid: a factor in evolution* pointed that cooperation was abundant in the

natural world and that ecological conditions were central to its evolutionary success (GARDNER 2008, 2). Also in the field of Evolutionary Biology, Hamilton's work focused in the evolutionary theory of social behavior in nature. He classified these behaviors on the basis of the fitness consequences of the behavior of the actor and the recipient (HAMILTON 1964a, 1964b). According to Hamilton, mutual beneficial (+/+) behaviors increase the fitness of the actor and the recipient; selfish (+/-) behaviors increase the fitness of the actor and decrease the fitness of the recipient; altruistic (-/+) behaviors decrease the fitness of the actor and increase the fitness of the recipient; and spiteful (-/-) behaviors decrease the fitness of the actor and the recipient. He saw social interaction between relatives everywhere in nature, and understood the potential for an evolutionary theory of altruism. He set about re-examining the fundamental theory of natural selection in the light of relatedness and the possibility that an individual's fitness was determined, in part, by the behaviors of its neighbors.

In 1971, Trivers called the attention for one specific mechanism of cooperation: direct reciprocity, which evidences the principle 'if I will scratch your back, you will scratch mine'. He also focus on another characteristic of cooperation – altruism (TRIVERS 1971). It is defined as the behavior of suffering a cost to confer a benefit. 'Reciprocal altruism is the exchange of such acts between individuals so as to produce a net benefit on both sides. Reciprocal altruism is one kind of return-benefit altruism'(TRIVERS 2006, 68). Trivers also underlined the role of the cheater or non-reciprocator. In direct reciprocity, being a cheater could imply a difficult situation for itself, mainly by the counteraction of the others. These actions could consist simply by breaking off a relationship with a cheater, reducing its benefits in cheating, or could comprise direct punishment or mere non reciprocation.

Back in the 1980s, Axelrod launches *The Evolution of Cooperation*, work in which he poses the basic problem of cooperation, which ' [...] occurs when the pursuit of self-interest by each leads to a poor outcome for all.(AXELROD 1984, 7)'. He applied Game's Theory to the study of cooperation, by implementing the Prisoner's Dilemma game with humans to test the conditions which favored the emergence of cooperation:

'In the prisoner's Dilemma game, there are two players. Each has two choices, namely cooperate or defect. Each must make the choice without knowing what the other will do. No matter what the other does, defection yields a higher payoff than cooperation. The dilemma is that if both defect, both do worse than if both had cooperated (AXELROD 1984, 7-8)'

Table 1 - The Axelrod Prisoner's Dilemma Payoff Matrix

		Column Player	
		Cooperate	Defect
Row Player	Cooperate	R=3, R=3 <i>Reward for mutual cooperation</i>	S=0, T=5 <i>Sucker's payoff, and temptation to defect</i>
	Defect	T=5, S=0 <i>Temptation to defect and sucker's payoff</i>	P=1, P=1 <i>Punishment for mutual defection</i>

Source: AXELROD 1984, 8.

In this selfish game, the tendency is to defect, unless the game is repeated several times. There are repeated interactions that make cooperation possible. 'This possibility means that the choices made today not only determine the outcome of this move, but can also influence the later choices of players. The future can therefore cast a shadow back upon the present and thereby affect the current strategic situation. (AXELROD 1984, 12)' Axelrod was the first using the strategy TIT FOR TAT. TIT FOR TAT is a cooperative strategy whether a player cooperate in the first move and then does whatever the other player did on the previous move (AXELROD 1984, 13).

With the publication of Alexander's *The Biology of Moral Systems*, other mechanism of cooperation emerged in the literature: indirect reciprocity. He tried to explain in coherently how human cooperation emerged in large groups and with individuals who didn't even meet (ALEXANDER 1987). This mechanism reports to the behavior in which a donor helps a recipient (who could not belong to the same family, or hasn't helped him previously), hoping that a third party, in the future, could replicate this behavior, helping him. Thus, donor's reputation is spread through direct or indirect observers to the rest of the individuals through gossip. According to Alexander, indirect reciprocity 'involves reputation and status, and results in everyone in the group continually being assessed and reassessed [...] (ALEXANDER 1987, 85)'

In the last 15 years, this mechanism has known a great concern from researchers and the concept of 'image-scoring' seems to gather some consensus. Nowak and Sigmund defend that information about another player does not require a direct interaction, but can be obtained indirectly either by observing the player or by talking to others (NOWAK 1998, 576). The idea implies the assignment of an individual positive or negative image, depending on whether the agent was seen acting altruistically or selfishly toward a third one. Those scholars have proved

that the image scoring itself evolves. The effects in the observer strongly induce cooperation. The evolution of the model of indirect reciprocity demonstrate that reputation is essential ' [...] for fostering social behavior among selfish agents, and that it is considerably more effective with punishment [...] (SIGMUND 2001, 10757)'.

But besides research in the mechanisms of cooperation, scholars have been underlining the crucial role of culture in human cooperative behaviors, which seem particular relevant if one is dealing with cooperation in past human activities. Historians acknowledge the relevance that time and space display in people's life. Culture, for this purpose, is defined '[...] as the information stored in individual brains that was acquired by imitation of, or reaching by, others (RICHERSON 2003, 358)'. Anthropologists and other social scientists claim the determinant role institutions perform in the evolution of cooperation, explaining the differences of diverse cooperative behavior. Beliefs, skills, mental models, values, preferences, and habits are inculcated in each individual by its participation in various social groups such as family, local communities, employers, nations or governments. Bowles and Gintis sustain that prosocial emotions are essential for fostering cooperation, essentially «strong reciprocity».

'A strong reciprocator comes to a new social situation with a predisposition to cooperate, is predisposed to respond to cooperative behavior on the part of others by maintaining or increasing his level of cooperation, and responds to free-riding behavior on the part of others by retaliating against the offenders, even at a cost to himself, and even when he cannot reasonably expect future personal gains from such retaliation (BOWLES 2003, 433).'

They state that these strong reciprocators are simultaneously conditional cooperators and conditional punishers, whose actions benefit other group members at a personal cost. The predisposition of individuals to cooperate is favored when they interact within their group members, with whom they share a common identity and exclusionary practices - «parochialism». The benefits of strong reciprocal cooperation to a group with parochial filters tend to equilibrate group size and to reduce cultural heterogeneity within the members. 'This enhances the effectiveness of mutual monitoring and reputation-building in supporting high levels of within-group cooperation (BOWLES 2003, 438).'

Genes, culture and environment are part of the process of building cooperative relations between individuals. In the Evolutionary theory a few authors have been developing the hypothesis of primates had widen a «social brain». Dunbar has noticed a correlation between primates' (including humans) brain size (through the evolution of the neurocortex) and the

average size of his stable social group (DUNBAR 2002, 63). The hypothesis of the social brain considers that cooperating in more stable social groups is costlier than non interacting cooperatively or cooperate in less stable groups. To fulfill these costs, humans and other primates evolved cognitively to stable cooperation in large social groups (GAZZANIGA 1985, 157-161).

The recent genes-culture co-evolution theory has tended to prove that human moral capacity was promoted through positive and negative sanctions given by cultural practices. Genes absorbed behaviors firstly developed in cultural and moral practices and certain moral systems have pressured the adaptation of certain genes to the system (BOYD 2009; PIPA 2011, 114). Human cooperation seems though to be a complex system itself, conditioned by genes, society and cognition to cooperate.

1.2. Trust and reputation

The focus on trust came to light in the 1960s, when sociology began, first, to pay attention to emotional, traditional, normative and cultural variables, such as values, social ties, partnerships, loyalties, solidarities, identities. The perception of society begins to change, since it is no longer perceived as a coalition of interests, but as a community. The sociologists' attention turns to the ways people relate to each other and what determines the choices of individuals, namely the values which influence trust (SZTOMPKA 1999, 4). Under the cooperation spectrum, it became clear that if our dependency to others increases, trust becomes very important as a way to stabilize relationships.

In 1979, Niklas Luhmann published a major analysis of trust, linking it directly with the increased complexity, uncertainty and risk (LUHMANN 1979). But it will be in the 90s, that attention to this subject of study increased significantly. The concept has been used by researchers in social sciences in an attempt to explain the empirical differences between levels of cooperation in different political, social and economic environments. Trust was designed as a complement or a substitute for contractual or bureaucratic ties, so trust lubricates cooperation (GAMBETTA 1990, 216). These are two views that fit perfectly within our object of study in a world where trade and credit were too risky and uncertain and political and economic situation were quite unstable.

Applying this approach to the past is not always easy, although others have already elaborated on this topic for the Early Modern Age (BRAUDEL 1992, 122-124). Casado Alonso states that a major factor in the success of foreign Castilian

trade throughout the sixteenth century was the creation of Castilian nations throughout Europe, that is, colonies of merchants in a given place coordinating and regulating trade between Castile and the city where it was fixed. This was one of the ways to build trust in Castilian merchant's image at one location and to increase their confidence in strategic trade and finance partners.

“La carencia de información y demás problemas comerciales de entonces provocaban que hubiera una gran falta de fiabilidad en los tratos comerciales. Por ello, la pertenencia a una colonia o nación otorgaba a un mercader la reputación de honestidad que le era necesaria para el buen desarrollo de sus negocios.(CASADO ALONSO 2005, 75-76)”

Richard Court has been also addressing this issue, particularly within the Genoese universe, with the case study of the Brignole family, reinforcing the idea that high levels of trust correspond to high values of trade and a high degree of complexity of the exchanges, available when there were repeated interactions (COURT 2004, 1000). Margrit Schulte recently evaluated the importance of this value through a dynamic network analysis of the presence of German merchants in England, noting that trust is maintained by a series of constraints in business obligations (BEERBÜHL 2008, 4).

According to Barbara Mizstal (MISZTAL 1996, 19-23), trust is sustained and stable in long-term relationships which are based on the following factors:

1. The motivations of others, since we want to respond to their desires and expectations, if we want to repeat the interaction with these other individual;
2. The strength of the expectations we place trust in others. That is, if we have very high expectations about something that depends on another person and these are not met, the trust will be broken. But if, on the contrary, we have a low level of trust and the partner match to our actions, our trust in him will be enhanced tremendously.
3. The mutual expectations of actors, including the persistence and satisfaction they both have in confirming the proper functioning of the moral order of society, which involves trust.
4. The values bequeathed by the ancestors or the community. Those can sustain a relationship where neither partner wants to break the bond of trust, because he knows he can be punished by the community or because he does not want to break his own principles. We know that the honor and credit was an essential value in the Ancient Regime in Castile, as the reputation of being worthy or not trustworthy would result in the isolation of the individual or not from any credit operation (TAYLOR 2003, 13).

Sztompka states as well there are some situational issues where it is more likely trust to emerge from the trust itself. These happen in «small worlds», in communities and small and cohesive social networks, where all members are known and visible to all, and in which is identified a high degree of interdependence and lasting relationships over time.

‘When people are implicated in dense, intimate networks, they are horizontally constrained to keep trust. If one cheats another, the rest will intervene, in defense of the easy, free flow of interactions beneficial for all. A merchant who cheats a customer may expect sanctions from other merchants who will not want to spoil the trustworthiness of a firm, or the wider market network, which brings benefits to all (SZTOMPKA 1999, 94).’

The way to evaluate the degree of trust of others can be the existence of a ‘culture of trust (SZTOMPKA 1999, 99)’. This culture of trust can be based on biographical and personal characteristics of someone who learned from their socialization to trust others, making compliance with the expectations of each other something natural. Or, on the other hand, there is a system of norms and values that govern society, variable in space and time. If these rules are governed by cultural relations of trust or distrust of others, they set up a default behavior.

Our universe of analysis is quite distinctive. In a complex economic and financial system defined in an extended space level, different cultures can coexist. So we have to reformulate the question in a different basis. After examining the process of how to establish trust between partners in a mercantile network, in the second half of the sixteenth century, the question to ask is: was trust essential to the functioning of such system?

There are few studies concerning reputation itself. This issue appears in the literature inserted in broader thematic areas such as sociological studies on trust. As we have demonstrated above, reputation is considered to be one of the reasons to establish trust relationships. In other research perspectives, reputation is perceived as the main lever to the indirect reciprocity (a mechanism of cooperation), as we have pointed out in the section 1.1 of this chapter.

1.3. Social Network Analysis

The network theory began to emerge in the early 1930’s through the contribution of three main perspectives. The first involved a group of German scientists inspired by the Gestalt

movement, working in the United States and influenced by the work of Wolfgang Köhler on cognitive and social psychology (KÖHLER 1925). They focus their research on problems of sociometry and group dynamics. Jacob Moreno aimed to explore the ways in which people's group relations served as both limitations and opportunities for their actions. So he developed a sociogram as a mean of representing the formal properties of social interactions, where individuals were represented by points and social relationships between the individuals by lines (MORENO 1934). Kurt Lewin had as research's focus social perception and group structure. He defended that a social group only exists in a 'social space' that makes the group and the environment interdependent in a system of relations. Again, in the social field, points are connected by paths. Paths tie together points, dividing a field into 'regions'. Each region is separated from the others by the absence of paths between them, which means that the mobility of the individuals in a social sphere is determined by the boundaries between regions (LEWIN 1936, 1951). Despite this two important contributes, graph theory was developed by König in 1936 (KÖNIG 1936) and was only spread in the 1950's by Harary and Norman, who applied a mathematical model of group relations abandoning the cognitive goals, and focusing on interpersonal relations in social groups (HARARY 1953).

A second group who was developing network ideas was based in Harvard by anthropologists and sociologists, who were exploring patterns of informal interpersonal relations, developing the concept of *cluster* or *clique*. Elton Mayo combined in his research the importance of individual motivation with the non-rational components of action. But it was W. Lloyd Warner who developed the *empiria* of this statement. He contributed to the field report on the Hawthorne workers, known as the Hawthorne studies. It was the first big investigation to use directed sociograms to illustrate the structure of informal relationships in real situations (SCOTT 2006, 18), although the deficient understanding of how could the social network shape the behavior of individuals. Simultaneously, Warner began a study of urban communities, where he talked of social configurations, using terms as stability, cohesion and integration, 'holding that the social organization of a community consists of a web of relations through which people interact with one another. (SCOTT 2006, 20)' He also termed sub-groups as 'clique', an informal association of people with the feeling of group belonging and in which were established norms of behavior (WARNER 1941, 30). Every individual is a member of a various range of cliques and display, for that individual, interrelations in which the whole community is directly or indirectly integrated (WARNER 1941, 111).

Across the Atlantic, in the Department of Social Anthropology at Manchester University, a third group of researchers added clear achievements in the building of network theory, specially

John Barnes, Clyde Mitchell and Elizabeth Bott. These social anthropologists developed the analysis of conflict, change and contradiction in tribal and village communities, as key factors to the maintenance and transformation of social structures. Influenced by the major sociologist, Max Gluckman, they paid particular attention to the real configuration of ties that arise from the exercise of conflict and power. Barnes and Bott discussed the concept of social network, in the early 1950s. Barnes focused on the role of kinship, friendship and neighboring in the production of social interaction. He believed that this type of ties integrated the informal interpersonal relations and were not conditioned by the external environment and institutions (BARNES 1954, 43). Elizabeth Bott, who studied anthropology in Chicago under the supervision of Lloyd Warner, began to study British families. She defended that the 'network' concept was an analytical tool to investigate the forms of kinship relations (BOTT 1957).

Mitchell tried, on the other hand, to apply the mathematics used by researchers of early sociometrics in a new sociological framework. In 1969, he presented a codification of social network analysis. He introduced Barne's idea of a sphere of interpersonal relations, called 'personal order'. Mitchell subscribed that the 'personal links individuals have with a set of people and the links these people have in turn among themselves' constituted the sphere of network analysis (MITCHELL 1969, 10). This network could be built from two ways: communication, involving transfers of information between individuals, the establishment of social norms, and the creation of a degree of consensus; and transfers of goods and services. He introduced the concept of 'partial networks', which derives in two directions: the first, the anchorage of the network around a particular individual, generating 'ego-centered' networks; the second, the selection of a particular aspect of social activity over the 'global network', like political ties, kinship obligations, work relations etc. Although the method focus on the connectedness of the individuals in the 'partial network', Mitchell defends that they involve the combination of meaningful distinct relations. Besides selecting one type of social relationship to study, it is combined into a single, multi-stranded relationship. He also introduced three different issues of network analysis: reciprocity, intensity, durability of the relations and the density and reachability of the network⁵.

Based on these three backgrounds, Harrison White, in Harvard, followed by his students and colleagues, established social network analysis as a formal method of structural analysis,

⁵ Reciprocity is related to the direction of the relation, measuring the degree to which the transaction or orientation is reciprocated. Durability is a measure of the lasting of the relation. Those are the underlying relations and obligations activated in determined transactions. As intensity, Mitchell refers to the strength of the commitment to the obligations of the relationship, which cannot be confused with frequency. Concerning the network per se, Mitchell defines density as the extent to which all possible relations are actually present, and reachability as the easiness for all people to contact one another through a limited number of steps. (SCOTT 2006, 32).

namely in the mathematics of graph theory. The block modeling was thought to be an accurate mathematical way to find structurally equivalent agents, individuals that have similar linkages to the occupants of other positions. Rather than analyzing specific sets of lines, points and paths, all points and their connections were handled simultaneously, combining the rows and columns of the matrix, basing the analysis on the characteristics of both (LORRAIN 1971). In a network there could be one or more blocks. Within a block, the internal relations must be positive or neutral. The external ones, when exist, are all negatives or neutral.

White and his disciples placed network analysis in a dynamic plan. This approach was far more appropriate to social reality, since the social structures are integrated in an evolutionary unstable process. White developed a multidimensional scaling, 'a scaling technique for translating relationships into social distances and for mapping them in a social space' (SCOTT 2006, 33) – it was a form of determine the hierarchical evolution of the actors within the network.

Also in the 1970's, the Granovetter's work made an impact on the approach to social phenomenon. It was called 'the strength of weak ties'. According to his empirical findings, there were two types of ties. One, the strong ties, the ones that involve kinship and friendship between individuals to whom a person is closest. They all tend to interact with one another in numerous situations and so there is a tendency for them to possess the same knowledge. This means they are less likely to be the sources of new information from more distant parts of the network. On the contrary, weak ties, individuals who are mere acquaintances and don't have frequent contacts, are the ones that transmit new information. Granovetter argues that weak ties are points of contact between clusters of individuals that, in other way, would be isolated, or would establish contact between each other through a more distant path (GRANOVETTER 1983, 1973, 2005).

At the end of the decade, it was created the International Network for Social Network Analysis, which founded two periodic journals on network analysis: *Connections* and *Social Networks*. This research network pursue the goal of joining people from different disciplinary background, at a global scale, to share experiences, doubts, dilemma and research projects on social networks. They built a bridge between countries, experiences, but mainly between mathematicians, physicists, anthropologists, sociologists, economists and humanities scientists.

This was also the period for a massive adhesion to the social network analysis in Social Sciences, mostly adopting the approach of structural analysis. This aimed to identify the significant positions every actor had in different relationships that tied the individual to the network. It meant that it was not the total number of the individuals, the researcher had to focus on, but he had to valorize instead the ties that connect individuals. The theoretical premise was

that it is the network which conditions the behavior of the actors and not the opposite (REQUENA SANTOS 1989, 149).

Burt and the theory of structural holes brought another interesting input on network analysis, in the early 1990's. He claimed that a social actor is on an advantageous position in the network when he establishes contacts between individuals that does not have any connection between them. Structural holes don't exist between strong ties, but they exist among weak ties, where the lack of directed connections exists between pairs of individuals (BURT 1992).

In the same decade, the French Lemieux and Ouimet defended the theory of relation's coordination. They argued that there is a demanding for coordination in social sets, because their members must consider themselves connected to each other by relations of belonging. They must feel different of the members of others social sets in the respective environment. Coordination principle demands a linked organization of relationships between actors within a network (LEMIEUX 2008, 60-61).

'Network theory attempts to explicate how social and cultural phenomena emerge out of interaction by measuring, across observable networks of communication and of social and instrumental relations, events and activities, and ideally, through time, different kinds of emergent structure.(WHITE 2004, 179)' This definition of network theory makes clear the advantages historians can have to apply not only the theory, but mostly the method, to social historic phenomena. Network analysis is an approach that makes simpler the understanding of complex social inter relational realities, in a certain time and space. It allows the production of quantitative indicators and a synthesis scheme scientifically reasoned. The analysis is more than descriptive, and becomes more objective. As claims Claire Lemercier, 'une étude historique des réseaux, de leur genèse et de leur évolution est d'ailleurs un bon garde-fou contre tout déterminisme (LEMERCIER 2005, 111)'. It is a dynamic approach, useful to know the evolution of a number of relations between individuals and the enlargement or contraction of the network, in a long or medium term.

In the analysis of relations between social actors, historians can exhaustively explore the individuals and the relations they were involved in, even in an hierarchical manner⁶. The first step is the comparison between a group of individuals, according to their «social capital» - the attributes and social characteristics of the agents – and their «relational capital» - the length of the edges, composition of its content, multiplicity or partitioning of the types of relations, the density of the network. The focus is though on the attributes of the agents, their functions or roles,

⁶ 'Estas relaciones jerárquicas o verticales podían cobrar diferentes valores y vehicular tanto la protección y la ayuda como el abuso y la explotación, la concórdia como el conflicto.' (IMÍZCOZ 2001, 26)

and their relations. The methodological approach allows to observe the reality in three levels: micro, meso and macro. As Lemerrier describes, 'elle peut en effet fournir des indicateurs décrivant la position de chaque individu dans le réseau étudié, des données sur les groups «cohésifs» qui peuvent s'y distinguer et un résumé de la structure d'ensemble.(LEMERRIER 2005, 92)'

Having as main theoretical postulate the idea that it is the structure that influence the individual, the network theory assumes that is the social structure, built upon the actions and relations of the agents, which explains the changes in the individuals and in their relationships (MOUTOUKIAS 1998, 236). People don't relate with each other freely and randomly, but according to the structure of relations, in which they are involved in (IMÍZCOZ 2004, 127). One other thing network analysis can show to historians is the emergence of the norms which condition the behavior of the individuals belonging to a determined network. These norms are created by the social structure they are involved in, and consist in mechanisms that are forged in the relations' network that limit, in a certain way, the actions of the individual. For instance, if a commercial agent does not want to lose the cooperation of another, he can't act in a contrary form of the norms which regulate and sustain the cooperation in that network.

According to the experts two focus of analysis must be considered: one, the interactivity criteria and the relationship contents; the other, the formal analysis of graph theory. The first, aims to study the multiplicity and overlapping of relationships, as well as the meaning of signs and norms that come out of relationships. The formal analysis demands the use of concepts and unities of measure used in network analysis theory, which has been mentioned above. But the use of concepts such as density, betweenness, centrality or degree could present some difficulties for historians to use. Yet, if one consolidates knowledge based on these concepts, he can provide some scientific credentials and quantitative approaches to what used to be a qualitative outlook (MOUTOUKIAS 1998, 240-241).

Network analysis also permit the historian a more accurate vision of the past realities, since it don't work with aprioristic categories of analysis; they are inferred from the analysis of the relations between the elements that compose that structure. So, instead of reducing the diversity of observed behaviors to determined boxes of contents, the network analysis assumes the existence of variation and dispersion, building the categories of analysis in an empirical way.

The observation of the reality is multiple and intercrossed. Being the individual a global entity, its articulations with other agents are complementary and multidimensional. The major problem historians have to face is the lack of continuous series of sources, especially for studies in Early Modern or Medieval Ages. The researcher has to be aware of the impossibility of having

a real and complete network. Due to the lack of complete serial data sources, especially those derived from private collections, as private correspondence, historians can only achieve the reconstitution of partial networks, Interaction with different data sources, becomes, thus essential in order to put together networks progressively more representative of the past reality.

1.4. Early Modern merchant networks in historiographic approach

Since the 1980s and 1990s decades, in reaction to the total history of the French structuralists of the *Annales* school, some historians began to focus on the individuals as agents of evolution and change through time, developing microscopic approaches of historical dynamics promoting microhistory, prosopography, biography, and using private documentation, as correspondence. Political history, based on the identification of those considered major social actors and their relations and contacts, provided as well new inputs on this approach. Family and community studies also arose among historians. With an increasing influence of Anthropology among historians, it had been assumed that the family or the neighborhood are key elements of the social tissue, base and motor of internal social functioning, dynamics and logics. Historians began to question the value of the classic categories they have been working with and the historical protagonism of classes, social groups and the State was transferred for the individuals, looking for their real collective configurations, their motives, experiences and values, and their interactions in rupture contexts (IMÍZCOZ 2001, 20).

In the last two decades, the word 'network' has been recurrent in historiography, namely in social history (elite's studies), family history and even economic history. It is impossible to name and appreciate all the historical studies based on the theory and methods of networks. We will then focus on the principal studies on economic and merchant networks of the Early Modern period.

The work of Fernand Braudel and his disciples in 1950s is referential in this framework. Both in *La Méditerranée et le Monde Méditerranéen a l'époque de Philippe II* (BRAUDEL 1983) and *Civilisation matérielle, économie et capitalisme, XV^e-XVIII^e siècle* (BRAUDEL 1992), Braudel introduced a way to study trade in Early Modern period which was centered on agents, merchants and financiers. These individuals were integrated in different circles, not only geographical, but also social and relational. This structural focus already mentioned the term 'network'.

These studies were pursued by Braudel's pupils of the *VI^e Section de l'École des Hautes Études*, namely through the multiplied research on European merchants houses. The publication

of serial documents of their private archives, namely their correspondence was on the base of the collection '*Affaires et Gens d'affaires*' (LAPEYRE 1955; SILVA 1959; SILVA 1956; RUIZ MARTIN 1965). Developing mostly biographical studies, these authors studied mainly Italian and Iberian merchants and outlined their contacts, the relations between them and the function each individual performed. Even though network analysis was never a methodological process, this group of historians had already the idea that trade was a dynamic process, not only started by the States, but promoted by self-organized actions of men of affaires. They also focused their attention in how merchants like Simon Ruiz, the Ximenes of Lisbon or the Fugger, were socially organized (EHRENBERG 1955). They studied the social processes that guided the relationships between agents, namely associating factors such as conjuncture, levels of wealth, marriage policies. They were truly precursors in social history of merchant networks.

Although studies on trade in the Early Modern times have continued in the following decades, only 20 years ago, this kind of prosopographic studies came to light again, after some decades of economic history guided by econometrics, where numbers, salaries, prices, levels of production prevailed. This new economic history, emerging through the studies of trade in imperial economies (mainly in the Atlantic and Indian oceans), began to use the words 'merchants network' in the titles of the works produced. In 1996 a *Variorum* title brought to light a collection of articles written under the subject *Merchant Networks in the Early Modern World* (SUBRAHMANYAN 1996). The focus, as Sanjay Subrahmanyam described, was the study of merchant communities, where the diversity of personal attributes of the agents (merchants), like religion, ethnicity and patterns of marriage were in display in the evolution of those communities. In this volume, communities and prosopographic studies were combined in micro spatial and chronological approaches. What is common to all studies is the inability of supporting the concept of 'network'. One can see through the pages a descriptive and a valid careful historical analysis and interpretation of relations between individuals and places, sometimes reaching an overall portrait of a group of merchants, with a particular identity. The book is nevertheless dominated by confusion between what is the study of a network and the get together of 'diaspora' processes. The concept of network was never cleared. The simple interconnection of individuals who had economic relations and trade collaboration, as the establishment of agent's representatives in overseas commercial or financial centers was considered a network.

A lot of works continued to be produced under similar trends, the absence of a real network analysis being the rule. The quality of the research in merchant networks was becoming more accurate, as researchers began to dive into the network analysis bibliography. The

reflection of this effort began to appear in the last decade, in which there has been a massive production on the subject, which we will try to describe by sampling.

In the last five years, in every congress on economic history in the early modern times the word 'network' is repeated exhaustively in the titles of communications. But instead of individualizing one or another work of this theme, one will focus in two quality ensembles of works. In 2002 a workshop in the European University Institute in Florence, organized by Diogo Ramada Curto and Anthony Molho, debated a series of topics regarding merchant networks in the Atlantic and Levant spaces, always involving maritime trade. The scope of the workshop resulted in five papers dominated by expressions such as 'complex systems', 'interdependence', 'reputation', 'trust', 'dynamic' or 'evolutionary process'(CURTO 2002).

In her presentation, Francesca Trivellato wrote that

'network analysis can contribute to narrow the gap between an anthropological approach (focusing on social bonds and ethical norms) and an economic approach (presuming rationality in a basis for economic activities), for it allows us to look at both the working of reciprocity and reputation control between members of different communities, and also at the construction of their identities as a process of the integration itself, rather than as a given ⁷.'

This quotation reflects already some of the principles of the network analysis theory mentioned above. Focusing in the overall picture of the network, Trivellato tries to analyze the norms emerging from merchants' networks from different communities (different places, different ethnicities, different religious backgrounds), as well as to understand the importance of the circulation of information for the economic activity.

Although different participants of the workshop never used a truly network analysis, they made a qualitative description of the networks. Through the pages we assist to a holistic interpretation of merchants networks. The papers focus on the importance of informal merchant networks, self-organized, born out the barriers of State or other institutional control. They assume that control is manipulated within the network and emerges from it. It is also sustained that the existence of these networks are based upon weak ties⁸.

Cooperation in merchant networks, even if not analyzed systematically, already appears in the paper of Maria Fusaro, '*Commercial Networks of Cooperation in the Venetian*

⁷ TRIVELLATO in (CURTO 2002, 10).

⁸ 'Loosely knit networks that connect individuals in a variety of directions, and that encompass friends and acquaintances in a series of non intersecting groups, may be more efficient in creating opportunities and promoting the defense of economic interests, that might tightly knit networks, each of whose members knows the rest, all, collectively, contributing to the existence of a considerable social communication and to a combined pressure to reinforce traditional religious and family values' in (CURTO 2002, 14-15).

Mediterranean: the English and the Greeks, a case study (FUSARO 2002)'. Trivellato reexamines the subject in her PhD using the same approach of cross-cultural trade (TRIVELLATO 2009). They both prove, in a qualitative and non-systematic way, how crucial is the focus on trust and reputation for people of different nationalities, religious backgrounds and different ethnicities to cooperate with each other.

In 2004 it was published another collective work on commercial networks in the Early Modern and Modern period - *Spinning the Commercial Web. International trade, merchants, and commercial cities, c. 1640-1939* (BEERBÜHL 2004). Under the postulates of new institutional economics and network analysis, in the introduction of the book, the editors defend that the traditional statistics and the exclusive analysis of historical conjuncture are not enough to interpret changes in relationships between different economic agents – 'Trust, cultural and social aspects, ties, values, as well as dynamic interactions ignoring profit-maximizing strategies or transaction-costs efficiency are identified as key-factors in commercial dynamics (BEERBÜHL 2004, 14)'. Network analysis plays an important role regarding these aspects to issue in the study of merchants' networks, evaluating the direction, dynamic feature and volume of change. Network analysis can picture the «multi-layered» process of international trade in the past, capturing contemporaneous actions in different places, but between agents who are close to each other in a social and economic point of view. The diverse papers focus in organizational aspects of interactions in different trade networks. The networks of space are also analyzed, mainly between ports, trying to explain in a dynamic approach the emergence and decadence of some of these spatial entities.

One of the trends in Early Modern trading networks historiography, as we have seen above, is marked for what Philip Curtin has called «cross cultural trade» already in 1984. This expression designates the trading encounter between people from different national, religious and cultural backgrounds. If this assumption revealed the absence of frontiers between such distinct agents, it was based in a concept of trading Diaspora (CURTIN 1984). Diasporas were played by ethnical minorities which trade within each others, as it is the case of the Sephardic Jews. They were main characters of Almeida and Frade research, which focused their works in New Christians merchants in Antwerp (and in the Portuguese «*Nação*» in that city) and their relations with merchants settled in other spaces, mainly Lisbon, in the spices trade. They concluded in a tighten endogamy of New Christians trading contacts and agency networks (ALMEIDA 1993; FRADE 2006). This tendency was also subscribed by *Capitalismo e Judaísmo. Contribuição dos judeus portugueses para a ética capitalista* (NOGUEIRA 2004), which considered that Judaism tradition compelled the development of commercial capitalism in Early Modern times.

On the contrary, recent works born out of the same inspiration have figured out that these communities needed to increase their network efficiency by trading with different people from different social backgrounds, in transnational stages, integrated in overseas imperial realities (ANTUNES 2009; ROITMAN 2008; STUDNICKI-GIZBERT 2007; BOYAJIAN 2008; COSTA 2002). In this matter, some of the authors supply interesting theoretical and methodological approaches regarding network analysis principles, considering risk as an important variable to the establishment of different business relations and stressing the importance of trust and reputation building among different merchant groups associated in long-distance trade (TRIVELLATO 2009; LAMIKIZ 2010; CRESPO SOLANA 2009). Nevertheless, contents of different merchants' private correspondence have already pointed out these topics of analysis (PRIOTTI 2004; BEERBÜHL 2007).

Another interesting analytical framework in historical literature came from the field of the New Institutional Economy, which most inspiring approach was designed by Avner Grief. This approach defends that self organized trading networks need institutions to foster commitment between agents by generating regularities of behavior. Those institutions can be formal (like States regulation) or informal (rules, beliefs, norms, systems of values). Grief tried to understand which European institutions regulated trade and supported interpersonal exchange between Genoese merchant's guilds, on one side, and Maghribi caravan traders' coalitions, on the other (GRIEF 2006).

An important contribute of this research field was to realize how information circulation influenced cooperation in medieval trade. In small communities, where members could be kept informed of each other's behavior, reputation can ensure against the rise of opportunistic behavior. However, as communities grow larger it becomes harder and more costly for individuals to be perfectly informed about the behavior of others. Then the institution of the law merchant arises to protect the community from opportunistic behavior. The institution of the law merchant cannot exist unless it successfully minimizes transaction costs and the law merchant is not corrupt (MILGROM 1990).

Nevertheless, visual and quantitative network analysis on historical trading networks has been developed in Late Medieval Genoa and the Hanse. Mike Burkhardt studies the evolution of small Hanseatic merchant networks in the long-run, comparing different forms of commercial association and mechanisms of partner choice (BURKHARDT 2009). Quentin van Doosselaere has also developed a long-run approach of merchant's community in Genoa from the 12th to the 15th centuries. He explored quantitative features of network analysis, such as cluster analysis,

connectivity measures, density ratios and path lengths, which is an innovative approach (VAN DOOSSELAERE 2009).

All these contributions confronts an historiographical approach which traditionally emphasizes the action of Crowns, States and other formal institutions as responsible for economic shifts. To authors like Boxer or Elliot, the economic and financial framework in the sixteenth century was conditioned by formal imperial structures and policies, proposing monopolies as the main element which explains and determine overseas economic dynamics (ELLIOT 2002; BOXER 1969; RUSSELL-WOOD 1998). On the opposite, our approach, following more recent historiographical contributions, claims that it is unquestionable that private agents took advantage of the conditions created by the imperial authorities to potentiate their trading activities, although based on self-organized networks and guided by the self-interested search for profit.

2. Theoretical assumptions

2.1. Problematic in analysis: research questions and hypothesis

In this dissertation, four main hypotheses will drive us our analysis:

- The dynamics of cooperation in trade networks is determined by conjunctural political and economic issues, but also by intangible factors such as trust and reputation.

In the second half of the 16th century, the grade of interdependency between trading agents was growing, at the same time different trading circuits interconnected with each other, inside and outside the European continent. Trade and finance networks became denser and grew in complexity. If different geographical points presented different business opportunities, to each of them corresponded contact agents, which played different functions across the supporting networks of this economic system. Evidences of such organization are the establishment of merchant *nations*, organized national merchant guilds in financial and commercial places abroad (CASADO ALONSO 1995).

In this sense, trust and rumor displayed key roles for the realization of business between distinct partners. Ricardo Court, in his analysis of the Genoese *Brignole* family, has noticed that

trust was one of the crucial features for the sustenance of long time commercial relationships, sometimes enforced by concrete acts, as marital alliances (COURT 2008, 4; 2004).

Outside the domain of historiographical research, other scientists have wondered how people who does not meet and does not know each other were able to trade. One great example is the internet trade. Claudia Keser sustains that lasting efficiency in e-commerce must be sustained by high levels of trust and trustworthiness between anonymous buyers and sellers, guaranteed by a short and long turn reputational management system (KESER 2002, 19-20). Cognitive Sciences have already proved that trust is essential when risky decisions are taken. After a neural evaluation on the importance of building a cooperative partnership with a certain individual, an human being recovers a reputational social image of that agent, choosing or not to cooperate with a new partner (DI TOSTO 2008). Human neurophysiology could be applied to the past, where circulating information would display a crucial role and reputation would depend on rumors. As Matthews stated, regarding the role of Fugger Zeitungen, their agents

[...] represent the news as it might appear on the unedited, continuously moving tape of a press agency's teletype: true reports and false rumors, trivial occurrences and important events follow one upon the other without interruption and without discrimination. (MATTHEWS 1959).'

- Historical trading networks have a dynamic lifecycle, in which partners do business with temporal continuity.

This assumption might appear as a common sense statement. However, trading networks in historiography are usually shown as static, in which its dynamical and complex character is forgotten (CRAILSHEIM 2009; KALUS 2009), instead of defining a network by the sum of the agents who integrate it over time. On the contrary, physicists and mathematicians studying networks sustain that real world processes can be represented as an evolutionary dynamical system, where there are independent dynamical variables in each node, which are coupled together only along the edges of the network (NEWMAN 2010, 686). This means that repeated interactions between individuals can always be different, according to the different variables used by each one in each connection.

Historical focus in time evolution implies that networks have a beginning and an end (CASADO ALONSO 2010). Some agents enter the networks, others are excluded, the

structure changes. An individual may emerge frequently both as partner and as rival. The same agent may perform different functions in a same network throughout time. The place of an individual in a marginal position in a specific network may be simultaneous to his central place in another network. Relations of power and hierarchy are mutable within the network. Douglas R. White called this phenomenon «distributed transformation», which he described as

'[...] the result of reweighting of network elements, the tipping of network structures into a redistribution of elements that may once have been centralized. Structural catalysis may alter which kinds of relations are utilized as the basis of grouping and/or as the basis of exchange' (WHITE 2004, 177).

- Partners in trade have the tendency to be more punitive regarding the breakdown of internal norms created by the functioning of the network, rather than of external rules.

Network rules evolve. They can be oriented by their formal (rules created by external institutions to the network, such as a legislative State) or informal rules (emerging and defined by the group) (FUTURE 2004). In historiography, considering self-organizing networks in which authority is diffused, namely running parallel to the exercise of political power, being either of Monarchies or Republics «Modern States» (POLÓNIA 2009), one have to consider as paradigmatic the emergence of functioning norms, formally or informally constituted to sustain the well being and fairness of cooperative relationships among these groups with auto regulatory mechanisms and policing. *'When this coordinate behavior takes place without the intervention of a central authority to police the behavior, we tend to attribute the coordinated behavior and the resulting regulation of conflict to the existence of norms'* (AXELROD 1997, 45).

The existence of norms requires cooperation, since they are only understood as such if repeated interactions of the same kind, regarding the same expectations, would have a similar fitness (YOUNG 2003, 391). Theoretical and empirical works have been proving the importance of this sort of behavioral equilibrium within a group, namely in a reputational-based cooperation (CHALUB 2006; FEHR 2004). In this sense, norms exist to prevent individuals to defect when they act in a certain way, which they shouldn't, being then punished.

Punishment can favor and sustain cooperation. Gächter et al. also sustains that 'it makes groups and individuals better off in the long run because costs of punishment become negligible and are outweighed by the increased gains from cooperation'(GÄCHTER 2008). On the other

hand, policing, operates when the system is organized so that the individual simply cannot gain through uncooperative behavior. 'When there is no avenue for cheaters to gain an advantage within their group, individuals can only enhance their own fitness by cooperatively improving the fitness of the group as a whole.'(GARDNER 2008, 16). In this dissertation, one aims to test the accuracy of such theoretical insights when applied to the study of cooperation in Simon Ruiz's network.

- The endogamy of an economic and financial network in the 16th century was limitative, since merchants and bankers were obliged to find partners outside the initial, familiar and ethnic network of cooperative contacts for their social and economic survival.

Through empirical observation, Hanna Kokko has found out that, in the animal world, the survival of one's network and one's reproduction is guaranteed by the enlargement of the original group, formed by genetic related individuals. She has designated this process as «group augmentation», since this survival is ensured by the recruitment of external individuals to their primary set of relationships(KOKKO 2001, 187). She also defends new agents doesn't have the same levels of integration. On one hand, she presents the passive enlargement, when individuals only benefit from an exclusive dyadic relation (A benefits from the relation established with B but doesn't have any other relation with other individuals in the network). On the other hand, it can occur an active enlargement, when the inclusion of a new partner brings directly significant benefits to agent B, but also raises the probability of new recruitments to the original network (KOKKO 2001, 188).

Historiography has been pointing examples sustaining this principle in trading networks, specially referring to cross religious and cultural economic networks (CURTIN 1984; ANTUNES 2009; TRIVELLATO 2009; BEERBÜHL 2004). A concrete case has happened with traders from the Amsterdam Sephardic Jewish Community. After building a business network marked by the ethnicity and religious similarity of its agents, they turned outside to the establishment of business contacts with non Jews (ROITMAN 2008). The well known Portuguese merchant Graci Nasi (or catholic name Beatriz de Luna) kept not only business, but also social relations with Catholics to maintain her survival and her patrimony and wealth safe from French government and Inquisitorial persecutions (BIRNBAUM 2005).

In his business activity, a merchant could invest, in this way, in costly social relations which would be beneficial in the long-run, within a certain strategy (BALMACEDA 2005, 2). According to

some Sociology models, namely the approach of Granovetter's «weak ties»⁹, the network of these individuals should initially be based in more frequent contacts with a greater intimacy and a larger frequency of reciprocal services – the «strong ties». Yet, he stated that weak ties are usually important for bringing together different clusters of individuals, which, in the contrary, would be isolated from each other, or would be connected with a larger path length (GRANOVETTER 1973; LEMIEUX 2008, 53). He resumes, *'[...] weak ties [...] are seen as indispensable to individuals' opportunities and to their integration into communities; strong ties, breeding local cohesion, lead to overall fragmentation.'*(GRANOVETTER 1973, 1378)

In fact, research in theoretical physics on the evolutionary process of cooperation has also demonstrated that social diversity promotes the emergence of cooperative behavior. Using game theory in heterogeneous population networks, Portuguese physicists have proved strong enhancement of cooperation, when both wealth and social ties are reinforced in the same proportions (SANTOS 2008).

Defined the theoretical problematic of this dissertation, a few questions will be answered throughout next chapters:

- What did condition the cooperation dynamics in trading partnerships in the 16th century?
- In what way did criteria of inclusion and exclusion evolve and interconnect the individuals in this kind of network?
- How did the social profile of the actors interfere in the definition of the network and in the acceptance of external members?
- Which mechanisms did exist for promoting cooperation?
- Which were the norms associated to the creation, maintenance and ending of cooperative relationships?

2.2. Cooperation: a concept under discussion

The key concept of this research project is cooperation. Presenting an unambiguous definition for it is a hard task, regarding the plurality of concepts and methodologies of this multidisciplinary research theme. The following pages do not have the ambition to be exhaustive

⁹ Granovetter defended the existence of different emotional intensity ties. He asserted that our acquaintances (*weak ties*) are less likely to be socially involved with one another than are our close friends or family (*strong ties*). In (GRANOVETTER 1983, 201).

in the bibliography available and in the overall perspectives. Instead, their goal is to underline important contributors for the definition of a concept central to this research project.

Although not being the first scientist trying to define this concept, William D. Hamilton was one of the pioneers to present a cooperation concept, used in a multiple range of disciplines. Cooperation exists when an individual assumes a costly behavior which brings him and others a bigger benefit, what is called an inclusive fitness (the outcome of cooperation). As an evolutionary biologist, Hamilton based his research in genetic related cooperation (kin selection) and in repeated reciprocal altruistic interactions (HAMILTON 1964a, 1964b). This vision of cooperation seems for this study clearly insufficient, since cooperation among merchants could be developed by mutual egoistic self-motivations. Other recent and wide concepts have been produced within the scope of Evolutionary Biology and syntheses on the study of cooperation have systematized dispersal features of a cooperation concept. One of this examples is the one brought to light by West *et al.* in 2007, according to which cooperation is described as 'a behavior which provides a benefit to another individual and which is selected for because of its beneficial effect on the recipient (WEST 2007a, 416)'.

Economists' definitions of cooperation focus on two fundamental characteristics. The first, defines cooperation as a collective action of individuals who aim to share a certain task, lucrative for all intervenient (JESUS 2009, 80). The second one faces cooperation as a social process where individuals, groups and institutions act in a concerted way to reach common goals. Economic approach, in this sense, focus not only in economic characteristics of cooperative relations (cost vs. benefit), but also in the social attributes of partners and their relations.

Axelrod, in a sociological research in the 1980s, defined cooperation as a way individuals interact according to their own interests, but produce effects on the social whole (AXELROD 1984, 6). In the limbo between public goods collective cooperation and individual goal motivated cooperation, this behavior moves itself within goals, expectations and motivations which imply a collective or dyadic interaction between individuals. In terms of our study, it is likely that individual interests of two agents could favor cooperation, as a mean where both could benefit; '*it is a major and fundamental error to take it for granted that because certain cooperative behavior will benefit every individual in a group, rational individuals will adopt this behavior* (GAMBETTA 1990, 216)'. Individual motives and beliefs are the basis of cooperation. They permit a certain equilibrium in interactions between agents and sustain the principle of cooperation as a game, where the benefit of each cooperative individual will be bigger than the cost for each of them.

Anthropology brings to the discussion the influence of cultural aspects in the emergence of cooperation in humans. For anthropologists, it's a certain group identity that sustains the action

of humans (RUFFLE 2006, 148). 'Cooperation is typically characterized by conditions in which individual group members can maximize their gains by refraining from cooperation when others invest in the cooperative activity. (IRONS 2001)'. Cooperation is also promoted by human system of beliefs and moral values. Cooperation could be an advantage for a better adaptation to social life, combining the individual benefit with the group benefit. Meanwhile mechanisms, criteria and rules of cooperation vary in time and space, depending on different cultural values (RICHERSON 2005, 251).

Specialists in Cognitive and Behavioral Science defend that cooperation is based in a rational decision-making process. But they also understand cooperation putting the tonic in the role of emotions in the process (FESSLER 2002). Cooperation is a process in which individuals act to maximize their own interests, also maximizing their rewards (positive interaction experiences which bring physical or emotional well being, self esteem or personal growth) and minimizing costs or punishments (negative interactions experiences bring emotional pain or a failure sensation).

'Cooperation exists when individuals work together to accomplish shared goals. When a situation is cooperatively structured, individuals' goals achievements are positively related; individuals perceive that they can reach their goals if, and only if, the others in the group also reach their goals.' (JOHNSON 2001, 2749)

Besides many Portuguese and international historians have studied different merchant networks throughout the Early Modern period (Braudel, Wallerstein, Gentil da Silva, Magalhães Godinho, among others¹⁰) and understood that social structures of business functioned through the interrelations of different individuals, in different places, none of them operated based on the concept of cooperation. In this sense, how can an historian define cooperation? Can this multiple concept acquire an historical character?

'Cooperar – obrar conjuntamente con otro o otros para un mismo fin (ALONSO 1958, vol.1, 1213).' This is the historical meaning Martin Alonso attributes to the word cooperate, used in Spanish language after the fifteenth century. The definition implies acting together with another individual in behalf of a shared final outcome. But was this meaning common throughout Simon Ruiz network? During the 16th century, Spanish and Italian were a sort of common commercial communication languages, spoken by the agents of trade and finance. Throughout the pages of bills of exchange and commercial correspondence of the Simon Ruiz company read by the

¹⁰ (BRAUDEL 1992, 1983; WALLERSTEIN 1990; SILVA 1959; SILVA 1956; GODINHO 1963-1971)

Portuguese team of DyncoopNet, multiple agents from different nationalities used these languages to communicate. In this data sources, however, the word cooperation or cooperate were never found, even if the concept existed already.

One believes that it is beneficial to apply to the analysis of historical reality of the sixteenth century, a concept proposed by different scientific disciplines, not forgetting however, the meaning contemporaneous of 1500s could give to the behavior we are trying to analyse.

Nowak gives a clear definition of cooperation. It '[...] means that selfish replicators forgot some of their reproductive potential to help one another', motivated by different reasons (NOWAK 2006, 1560). It is 'a behaviour that provides a benefit to another individual (recipient), and the evolution of which has been dependent on its beneficial effect for the recipient (WEST 2011, 232).' Accepting these definitions means to understand cooperation as an oriented interaction to a certain goal, through a certain strategy in a specific moment. It's an arithmetical puzzle of costs and benefits, beliefs, expectations and motivations.

Regarding that competition is the traditional companion of cooperation, how could economic agents of the 16th century balance between this two behaviors? Some conditions pre existed to tune up for cooperation in business, namely the existence of:

- a) The existence of a structure
- b) Rules inside the structure
- c) Public or private resources
- d) Thresholds
- e) Feedback
- f) Memory
- g) Identity and reputation

The network of Simon Ruiz persisted and evolved dynamically from 1557 to the beginning of the 17th century. Inside that structure, and applying the theory of network analysis, rules of functioning evolved to sustain the health of trading and financing among partners from different nationalities, religious beliefs and socio cultural backgrounds. Being a trade and financial network, it would be expected that mainly private resources would be at stake. But the reality shows a permanent flow between public and private capitals, an ordinary economic behavior of early modern states as Spain, France or German Princes States (EHRENBERG 1955). Behaviors and decision-making among these agents were truly conditioned by several features including

social cost, financial risk, time investments, identity or reputation risk, group size, network density, level of trust, extent of role specialization, level of coordination or management,

and level of feedback and information available (FUTURE 2004)¹¹, which evolve through time and were, indeed, unstable.

The flow of information between partners is a condition for the stability of cooperation and even to the introduction or exclusion of a partner in the network (COURT 2004; TRIVELLATO 2004). This condition is highly related with the importance of memory in this cooperative process. It is based in the costs and benefits of former partnerships and success of actions, which individuals tend to base their projections for future interactions (CASTELFRANCHI 2001; SZTOMPKA 1999, 71). But sometimes people did not have a past action to evaluate, and reputational affairs were disseminated among information flows and gossiping within a neighborhood.

2.3. Levels of Cooperation

In a way of gaining intelligibility to the concept of cooperation and in order to organize empirical data, the decision of categorizing aprioristically levels of cooperation to help data analysis was taken. Inspired by the ideas of Mathew Ciolek, one of the Associated Partners of the DyncoopNet project, and by the work in levels of cooperative relations for present enterprises of the Finish Marko Makipaa (MAKIPAA 2008), one created an operative taxonomy, which is hierarchical.

¹¹ (FUTURE 2004)

NUMERIC CLASSIFICATION	CONCEPTUAL CLASSIFICATION	DEFINITION
+3	COLLABORATION	Expresses long date dependency relations. This intense grade of cooperation includes, e.g. the inclusion of a new agent in the network, the equal sharing of gains and losses and the division of tasks through an interconnected specialization, such as commissioners.
+2	CO-ORDINATION	Demands mutualism between two agents. It can be named as investment relationships, where the two parties exchange services. It includes mutual social help between some social circles, to introduce new agents in a business, giving technical advice, facilitating loans, etc.
+1	COMUNICATION	It is a minimum requirement to cooperation, sharing some amount of information, which will raise the predictability of business, reduce costs and open certain markets. It could also include a warning from an outsider, an advice on new sale and investment opportunities, giving a recommendation on behalf of someone.
-1	DEFECTION	One of the agents refuses to cooperate, when he is expected to.

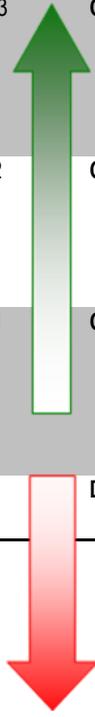


Table 2 – Levels of Cooperation in historical business relations – an essay

-2	CHEATING	Deliberate non-cooperation, with gains from the benefits from others, without costs, with the inherent risk of being punished.
-3	COMPETITION	Individuals who exclude themselves from the network, boycotting the cooperation within the network and cut off unilaterally relations with former commercial partners.

3. Empirical work

3.1. Space and time

The first principle to define a domain of study and to delimitate an empirical research, according to historical methodology, is the definition of a space and a specific chronology. In our case both were defined by the choice itself of the case study: the company of Simon Ruiz. The pertinence of the choice of Simon Ruiz trade and financial network as a case study was explained above, in the beginning of this introductory chapter. The characteristics of the universe under scrutiny and the adoption of the theoretical framework previously explained justifies that this study will not focus in any geographically entity in concrete, at least aprioristically. Space can be understood both as specific, geographical space and as an abstract space. Concerning geographical space this dissertation will incorporate the one defined by the action of Simon Ruiz network itself, centralized in Medina del Campo, with a second epicenter in Madrid. Geographical analysis will not be our main concern. Another PhD project elaborated by Sara Pinto will focus specifically on this dimension

This project will follow the steps of the individuals along, what Bourdieu called, the *social space*¹². Each agent has a specific position in it, which evolved through time. That position is conditioned by three different dimensions – the volume of capital that one has (economic, cultural, social or symbolic), the composition of the capital and the change in these two properties over time – *the individual's trajectory effect*¹³. This concept of space seems to fit our goals in this dissertation, as we aim to track the evolutionary paths of Simon Ruiz's network and of the agents who were part of it. This conception of space also underlines the strength of a relational social

¹² ' [...] the space can also be described as a field of forces: in other words, as a set of objective power relations imposed on all those who enter this field, relations which are not reducible to the intentions of individual agents or even to direct interactions between agents.' (BOURDIEU 1991, 230).

¹³ The trajectory effect defined by Bourdieu defended that the evolution of the form and contents of capital varied not only according to the value of the original conditions, but also in each individual's paths, since 'it governs the representation of the position occupied in the social world and hence the vision of its world and its future.' (BOURDIEU 1984, 113).

logic, which ends by influencing, in a certain sense, individual practices. In this sense, the structure and/or the pattern of ties in this network drove these agents to certain geographical places, being those choices clearly defined by the cooperative strategies at stake and by their contexts.

The concept of context proposed is not, however, what historians are used to, but an infogeomathics and geographical visualization systems' notion. Sperber and Wilson called it '[...] a psychological construct, a subset of the historians' assumption about the world' (SPERBER 1986, 139).

In terms of definition of time, evoking a «First Global Age» is a controversial affair in historiography. The discussion about the existence of a first globalization in the sixteenth century has been fulfilling the pages of a considerable number of scientific journals. The aim here is not to discuss this concept, following the work of Michel Bordo, Alain Taylor and Jeffrey Williamson, we believe, nonetheless, we can integrate our chronologic scop in a first period of globalization, defined by three different criteria: commodity markets, labor markets and capital markets (BORDO 2003, 1-2).

The sixteenth century was a time of a truly economic growth to Europe, even though it has integrated, moreover its second half, some periods of intense crisis and rupture of financial and political systems (SPOONER 1968, 14-17; CIPOLLA 2002). The activity of Simon Ruiz's firm reports from 1553 to 1606, but, in this dissertation, our final time mark will be 1597, the date of the death of Simon.

In that period, trading and financing circuits were dynamic mainly due to the affluence of precious metals, in particular the Spanish American silver. At this time, Castile, head quarter of Simon Ruiz company, had a considerable commercial vitality, but also high production levels of wool and some fabrics manufacturing in Segovia, Saragoza or Toledo (FERNANDEZ ALVAREZ 1990, 246-267). The financial market of the Spanish Court called to Madrid the wealthy German bankers and the Genoese, from whom the expansionist policy of the king Philip II became completely dependent. The Spanish *reales de plata*, since their arrival in Seville, were anxiously awaited as a financial guarantee in Antwerp, Lisbon, Rouen, but also in Europe's financial heart, first Lyon, then Genoa (MARSILIO 2000, 55-57).

The wars in which Philip II was involved, continuing the policy of his predecessor Charles V, diverted silver profits to the payments of foreign banker's credits, which was used to support conflicts and the armies in the Low Countries, Naples or Sicily.

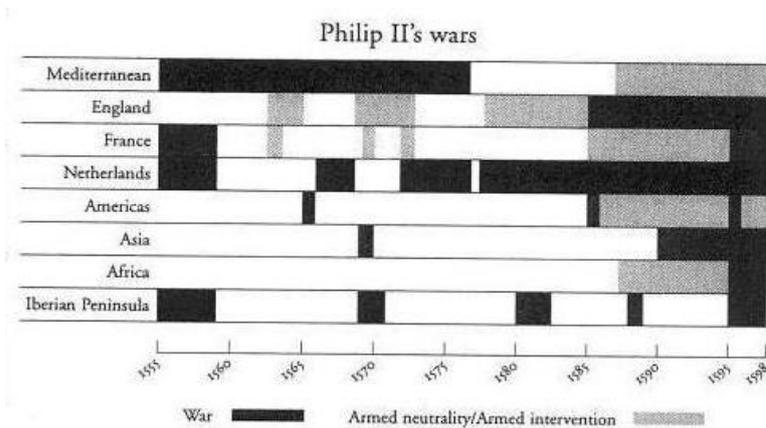


Fig. 1 – The Philip II's wars (PEREZ 2008)

It is important to underline that, at a great extent, the lack of liquidity and the impossibility to pay to the creditors originated important processes which conditioned the commercial and financial activity in this period. Opportunistically, this chronologic framework is privileged for the study of the impact of financial crisis, different levels of risk, rupture in cooperative patterns, and high financial speculation, which unavoidably were projected in Simon Ruiz network and in the economic behavior of its agents. This is also an optimum period to evaluate trust relations between individuals and their probability of becoming cheaters or defectors.

Based on the classic assessments of Wallerstein, Braudel or Eherenberg (WALLERSTEIN 1990; BRAUDEL 1992; EHRENBURG 1955), one can evaluate the importance of years like 1557, 1575 and 1596, which included Philip II's bankrupts, which directly reflect in the activity of Simon Ruiz, between 1553 and 1597. Eherenberg divides the time frame under scrutiny in three distinct periods:

1. The first crises, from 1557 to 1566. Joining the Spanish bankrupt in 1557, are the bankrupt of France in the same year and the Portuguese suspension of payments in 1560 (EHRENBURG 1955, 280-290).
2. The relations between religious wars and financial crises, between 1566 and 1577, mainly in France and in the Low Countries, reflected in the decadence of Antwerp and Lyon as commercial and financial centers of Europe and in the slow death of Castilian fairs, culminated in the Spanish bankrupt of 1575 (EHRENBURG 1955, 295-311).
3. The period of the prevalence of Genoese fairs, between 1578 and 1628. With the successive bankruptcies of the Spanish Hacienda, Genoese bankers and traders, greater supporters of the foreign affairs of Philip II, slowly began to

leave Spain and promoted their own fairs, in Besançon and Piacence, specially after 1596 (EHRENBERG 1955, 314-321).

Gradually, the productive Castilian activity stopped in detriment of the financial speculation, mainly after the third quarter of the century. The Genoese bankers easily obtained the right to export capital, which was prohibited before, diminishing the imports from Spain. With the thickening of demanding, the insolvency of Spanish producers was multiple (PEREZ 2008, 181). The wealth of colonial products (especially silver), as soon as arrived in Seville, was drained outside Spain, and all of the internal economic activities were badly affected.

In order to pursue our aim of evaluating the impact of intangible variables and the conjuncture's role in cooperation, the second half of the sixteenth century seems to offer not only a great field of study on economic aspects, but also significant richness in the occurrence of remarkable political and military events. In fact, we would like to examine the importance of the war with the Low Countries, which affected trade and exchange with Antwerp and the North of Europe (LESGER 2006, 123), as well as with French cities as Nantes or Rouen. The implications of the annexation of the Portuguese kingdom, in 1580, opening the doors to a pretended global Iberian imperium, dominating circulation in the Atlantic and Indian oceans (even though not sustained in a legal form) and an evaluation of the diversification of colonial products which entered in Lisbon, introducing new investment opportunities will also be questioned in our study. Would these events provoke deep changes in the network, reflecting new choices of investments to Ruiz and his partners?

These questions justify both the data source under scrutiny and the data source sampling criteria.

3.2. Sources

Given the theoretical assumptions of this dissertation, which converges with Dyncoopnet-pt project, the documental corpora privileged were the bills of exchange and the commercial correspondence with agents in Portugal, from the Simon Ruiz Company private archive. This archive, property of the *Fundacion Simon Ruiz*, is under the care of the *Archivo Historico Provincial de Valladolid*. The task of collecting data from these sources was shared with the colleagues Sara Pinto and Sandra Brito. The first is also developing a PhD dissertation focusing on a spatial analysis of the Simon Ruiz trade network, highlighting the role of space on network building. She is maturing an innovative approach which demonstrates the benefits of carrying on spatio-temporal analysis of historical data sources. We use the same data sources: about 9000

bills of exchange and 4000 commercial letters with agents in Portugal, resulting from a common sampling criteria which will be explained below.

3.2.1 Bills of exchange

The bill of exchange was born, as a commercial tool, in Genoa, back in the twelfth century, as a notarial contract in which a merchant delegated to another the responsibility of paying to a third individual, in his behalf, in a far city. However, with the growing complexity of trade and the multiple investment opportunities, merchants were not able to follow their goods anymore and directly receive their payment by the hands of the buyer. Bills of exchange were then the payment way of these transactions, being similar to a paper which permitted to execute the exchange in a distant foreign place. Their use was already frequent in the fourteenth century (ROOVER 1953, 43). 'The static manager could send and receive remittances from his factors and agents by bills of exchange (SPUFFORD 2002, 34)'. On the other hand, it reduced the risk of driving through the insecure European medieval roads with precious metal species.

In the sixteenth century, bills of exchange were the most common way of payment and credit in European trading circuits. With the progressive introduction of endorsement, the bill assumed less a contractual function, and more an extension of paper money. On the aftermath of Iberian overseas expansion, this was an essential mechanism to the existence of a comprehensible economic semantic in a larger business and investment spatial dimension.

The bill of exchange has four main actors in the act of exchange, even if beneficiary and payer and donor and taker could be the same person:

- The beneficiary – the final receiver of the bill and the transacted money.
- The donor – the one who advances the cash to the taker for him to pay to a certain beneficiary.
- The taker – the agent who takes the exchange, he is a cambist. He writes the bill in favour of a beneficiary, named by the donor.
- The payer – the one who assures the payment to the beneficiary, keeping a current accountability with the taker.

The act of exchange prefigures two distinct relations in this money circuit. A financial relation between taker and payer, and between beneficiary and donor, with a parallel account between one another, '(...)este vínculo solía responder a corresponsalías bancarias en el extranjero, relaciones de parentesco o sociedad o vínculos de carácter mercantil, que en cualquier caso garantizaban la fluidez del tráfico fiduciario materializado en la cédula o letra de cambio. (RODRIGUEZ GONZALEZ 2000, 684)' De Roover refers the existence of a boss and a proxy, one serving another (ROOVER 1953, 48).

Other individuals could join these, in an indirect way, entering in this money circuit in relation with one or more of the agents previously referred. One same role can also be performed by the several persons in the same exchange act.

The bill of exchange predicts the existence of two different moments. The first, in which the donor delivers the money to the taker and name the beneficiary of that money, placed in a different city. The second, in which the taker produces a document, asking the payer to pay a defined value, in a certain money unit, to the beneficiary. There were usually four copies of each document circulating at the same time, due to risks of undelivered mail. The taker would send a first copy directly to the payer, delivering a second copy to the donor for him to send it to the beneficiary, who would ask for the payment to the payer. The other copies were delivered to the other participants in the act.

The back of the bill could assume the role of a receipt or note of acquittance, informing the researcher when and how the execution of that bill was made, if by the beneficiary himself or his representative. There is also the information if the bill was accepted (the payer accepts to pay the bill, giving the amount of money to the beneficiary); denied (the payer refuses to pay the bill, or because he doesn't have enough money to do so or because he doubts of the taker's solvency (LAPEYRE 1955, 281)); protested (usually the beneficiary quarrels by the lack of payment); accepted under protest (when after quarreling, the payer ends by paying the contracted amount) or endorsed (the beneficiary passes his role in the act to other individual; the new beneficiary usually bought the bill to the previous one).

The complexity of the financial circuit is such that the researcher acknowledges different values in different money units, different exchange rates in multiple places and different times. One must consider that often a bill of exchange does not refer to a real exchange, but to a «*cambio seco*» - an exchange without real substance. It is just a settlement of accounts between correspondents. A taker is the donor at the same time the payer is the beneficiary. Later it would be sent another one in the inverse way.

This kind of document permits huge (re)construction of the trading, social and spatial network around Simon Ruiz and allows us to have an idea of its evolution overtime. Covering without interruption the period from 1553 to 1606, it allows to identify the appearance of new partners and the disappearance of old ones. The researcher can also characterize the individuals, in their names, gender, place of residence, religious affiliation, job, title and his position in the financial act. One can perceive the mobility and variability of the agents in the network.

On the other hand, bills of exchange, besides the financial relations described above, present trust relations (when the intervenient had someone who acted as his representative), family relations and sociability relations. The serial analysis of this kind of historical source enables the historian to delineate partnership relations in casuistic or lasting affairs, according to the frequency of appearances and the role played in several bills of exchange. 'Partnerships and financing, which had previously lasted only for a single voyage, took on a more permanent aspect...(SPUFFORD 2002, 22)'

Bills of exchange enhance the study of cooperation, due to different densities of the relations and to the values traded, which denounce different levels of cooperation and trust. They also permit to perceive different degrees of risk, costs and benefits of each relation and behaviors of reciprocity. Through the study of the level of acceptance of a bill one is able to evaluate breakings of trust ties, namely defecting relations, when a bill is denied or protested. However, in the study of cooperation, these historical sources reveal to be more limited.

Bills of exchange have a highly standard narrative and they often omit individual's characteristics of the agents, except the name. In this sense, it makes it hard to explain the variables which influence the partner choice, in a given moment. The lack of qualitative data does not allow to acknowledge how cooperation was fostered, maintained or denied.

The historian of cooperation in trading networks also loses the categorization of cooperation levels, and the mechanisms of trust building, such as reputation. But the major problem seems to be the absence of contextual information. Without contexts, crossing the collected information with very specific bibliography, namely provided in biographic and prosopography studies becomes essential.

3.2.2. The commercial correspondance

The use of commercial correspondance was already common in the thirteenth century. The constraints that transformed the trade from the fifteenth century onwards are well known. Though the correspondance between merchants was not new, its usage became increasingly

imperative. On the one hand, with the geographical expansion of business, commercial companies tended to establish contacts with agents located at a greater distance and which, often, they did not know. Letters hence became the great instrument for the merchant to exercise control over their agents abroad. The letters were, on the other hand, legal proof of a particular business, making unnecessary the statement of contracts in a notary. 'Letters became the primary tool through webs of which were woven commercial relations across space and social groups.(TRIVELLATO 2004, 4)'.

From a formal standpoint, the *commercial letter* is by no means a rigid structure such as *bills of exchange*, being richer in content, containing more details and larger variability of data for analysis. This means that the extraction of data is much more complicated. Besides providing us with names and other personal characteristics of individuals, making it also possible to establish more diverse relationships between the agents, the letters provide precious information on business issues: units of weight and length, insurance premiums, freight, currency exchange, qualitative and quantitative descriptions of products available in certain regions or cities are some of the available information.

Unlike the bills of exchange, the commercial correspondence allows to acknowledge the situations which can condition the network functioning and the behavior of individuals: news about the political, military, diplomatic, and climatic situation, as well as news about calamities, market fluctuations and investment opportunities a provided by these data sources.

The great potential of commercial correspondence for our research project relies as well on providing details related to the relationships between agents that support cooperative ventures, being those more occasional or more permanent. The correspondence informs about the intangible qualities that influence cooperation: friendship, support, trust and esteem (which can even affect a future collaboration), complicity and reputation. Such qualities allow us to understand why some agents enter in the network, or are excluded from it, providing grounds to test the concept and the mechanisms of "group augmentation".

The exchange of letters between partners allows us to understand the importance of rumor or gossip in the functioning of the network, as well as which type of information influenced cooperative behavior, such as news of bankruptcies, loss of credibility of a particular agent, big profits associated with a given business. With the collection of such information, we can assess the norms that affect such behaviors.

The limitations of the business correspondence have to do with the vast and complex amount of information, which is difficult to systematize in order to obtain accurate and stable variables. On the other hand, at the level of individual data, omission of some information often takes place,

which makes it difficult to establish relationships and to find the position and function of such individual in the network, at a given moment of time.

One must also take into consideration the intentions of the data source itself and the conditions in which it was produced. The sender, who writes the letter, files the text with intentions which may bias the information conveyed. One cannot overlook that the correspondence served as a means for the merchant to control his network, as well as his competitors. Thus, it might be the sender's interest to use a strategy of misinformation, something that the researcher who analyses the data must be aware of. As a private and personal document, the commercial letter contains information which reflects the sender's own vision of the world in which he is immersed. This subjectivity limits the objectivity of data collection. However, the wealth of information one can extract from the data is such that they became essential elements to fulfill research goals we set up from the very beginning.

On the other hand, it proves to be always relevant to cross-check the data collected in other sources with the one extracted from commercial correspondence, so that we may investigate the reputation of Simon Ruiz and his associates in the firm, and the way that reputation would influence cooperation. Considering the bills of exchange, one is basically, on the other side of the mirror.

Crossing the information provided by bills of exchange and commercial letters with other data source could be a pertinent option, scientifically justified. However, given the vast amount of existing documentation, however, a direct collection of additional data in archives was not feasible. Hence, we find it compelling to extract additional data, on published correspondence, regarding the business taking place in Antwerp, Florence and France (RUIZ MARTIN 1965; VASQUEZ PRADA s.d.), in order to understand if the mechanisms studied are homogeneous across the network or whether they change, not only over time, but also because they deal with individuals located in different spaces.

Due to the huge mass of documents (the overall Simon Ruiz archive contents about 57.000 commercial letters and about 21.000 bills of exchange), the team decided to invest in sampling, according to criteria which should be representative of the reality in study. Those were based in the determination of chronological periods of rupture and stability. Being the time scale of the documental *corpus* from 1553 to 1606, one decided to analyze the following years:

- 1553-1560: crucial years of network formation, after the first bankrupt of the Spanish Monarchy in 1557; established in Medina del Campo, Simon Ruiz begins its activities importing French fabrics to Castille. It was a very good

moment, with the Peace of Cateau-Cambresis, the restoration of transportation, the growth of Spanish economy and the big demand of French and Flemish fabrics (CASADO ALONSO 1997).

- 1560-1570: decade of economic expansion in Europe, but also of crisis in Seville; it is also marked by the beginning of the war with the Low Countries in 1568;
- 1575-1580: 1575 marked a profound bankrupt in the Royal Hacienda and its recurrences on the activity of foreign and Spanish merchants and financiers; the conflict of Flanders reaches its peak. In last years of 1570s, the Spanish king defeats *Don António, prior do Crato*, and annexed the Portuguese Kingdom to his domains; Simon Ruiz begins his important role as a banker of the crown.
- 1588-1589: war with England and disaster of the *Armada*; prohibition of trade with the Netherlands and England to the Portuguese merchants, since 1586.
- 1595-97: third bankrupt of Philip II in 1596 and death of Simon Ruiz in 1597.

This chronologic division is based on the first hypothesis of this dissertation. The aim to examine the importance of the political, military and economic conjuncture implies a time frame in which key events could influence partner choice criteria and the evolution of cooperation. Although these decisions excluded, also by operational reasons, a considerable part of the documentation, we believe that this sampling method assures representativeness to the analyzed data. In this sense, being analyzed about 9000 bills of exchange from 21000, it represents about 43% of the total data. Regarding correspondence, we transcribed about 400 letters to the database, which gives us a representativeness of 27% of the Portuguese letters. Consulting all the correspondence of the firm would be an impossible task both for project death lines, both for the time constraints of a doctoral dissertation. The choice of circumscribing the analysis to the letters received from Portugal is based on the assumption that cooperation emerged between Castilian and Portuguese markets and their overseas extensions before and after the Portuguese annexation in 1580. Although this restrictive criteria, the content of the letters point out to a network configuration and to trade and financial relations within the network that is far from being constrained to the Iberian Peninsula.

4. Methodologic options

In order to collect data Dyncoopnet's-pt team assumed that had to create a form to combine the more homogeneous and formulary information of bills of exchange with the diverse, variable and qualitative information of merchant letters. We used a tool developed at the University of Coimbra, by Joaquim Carvalho and his team¹⁴, based on micro-historical research with a strong emphasis on network analysis and prosopography. Using *JEdit* text editing software, in a first moment, we collected the information in a way as close as possible to the textual form of the document.

In a second moment, we translated and imported the information gathered to a common data base using the *TimeLink* software. This system is simple and flexible to use and it allowed the team to browse through complex networks of relations, collecting and processing biographical information scattered in different sources, using structured texts instead of pre-defined forms (POLÓNIA 2008). The information is organised in an FAR system:

1. **Function** – the role agents perform in a determined event (f.e., beneficiary, taker...).
2. **Attribute** – characteristics of the act or of the agent. Collecting data from bills of exchange we can gather attributes concerning the act of exchange itself, or to each agent in particular. Concerning the first ones, we have the date and local of emission of the bill, the value in transaction, the exchange rate between currencies, the normalized value of the trade in an unique currency (*maravedis*) serving a comparative purpose, date and place of payment, the copy of the bill, the foreseen form of payment and the effective one (cash, bank deposit or promissory note) and the acceptance conditions (accepted if the bill was accepted by the payer, or protested, accepted under protest or even endorsed).

The attributes concerning the individual characteristics of the agent can be common to both data sources. Details on the attributes of agents can be very helpful on the analysis of the construction of the network as well as on the promoting or mining cooperation relations. Besides the name and family origin, we seek for jobs, religious affiliation, gender, title, position (office), place of residence or permanence in a precise moment. Commercial correspondence also includes attributes, such as reputation, which could have a positive or negative character.

3. **Relation** – relations generated between agents. *TimeLink* assumes 3 levels of relationships in the system. The first, the explicit relations which are presented directly by the sources. We have registered financial, trading, legal, familiar and sociability, trust, suspicion, warning, collaboration, friendship, competition, cheating

¹⁴ <http://timelink.fl.uc.pt/mhk/>.

and defection relations, and its description is always based in the source's textual discourse.

The second level of relations between agents is called the implicit relations. Those relations are the ones which are not written in the source but we know they existed. We are working with trust relations, implicit when a specific agent uses repeatedly a representative. We also know that in a process of exchange always existed financial relations between donor and beneficiary, between taker and payer and between donor and taker. The software itself declares implicit relations, for instance when the source states that two individuals are part of the same firm. In that case the system automatically establishes a business relation.

The last level of relation is the inferred relations. After collecting all data using this software we can check some hypothesis concerning the type of ties between people and then establish criteria to confirm if the data agrees or not with it. For instance, we assume that an agent acting as a taker, which bills of exchange were rejected suffered from a general suspicion from his network neighbours.

TimeLink presents more advantages. It allows a dynamic reconstruction of individual biographies suggested by the register of persons with similar attributes and relations, accepting reversible identifications. The researcher creates «real persons», identifying in the different acts the same person in order to create his/her biography over the time. Otherwise, it makes it possible to export the data to network analysis software- GUESS or PAJEK. This dissertation used *TimeLink* to permit the visualization of networks of real people and from there navigate throughout biographies and attributes of related agents, constructing a network marked by different kind of relations.

The search in *TimeLink* is also very flexible. We can use the menu 'search' using research expressions and we can filter the information by using a time gap. We can also use the advanced search for a more accurate research. Other way is to go to explore page and search for the kind of attributes or relations that interests us. In any search mode we get access to the initial register and, and searching a real person we can see all the acts that an agent participated on, as well as his function there. One of the most important functions is that the one which allows to reconstitute the act in which an individual participates, and one can observe all the people that

are present in the same act, their relations with this particular individual and to all the other they related to. In the menu calendar we can see in each year which documents were registered¹⁵.

This system of data gathering allows, thus, qualitative and quantitative analysis of the data, and even geographical analysis, as more specifically explained by Sara Pinto (PINTO 2010).

One of the best solutions to study the evolution of cooperation, according to the individuals that are interacting for the achievement of a determined benefit, is the network analysis. Assuming that a network could be defined as a settlement of social units and direct or indirect relations between those social units (FONTES 2009, 284), we can integrate the principle of network in the study of historical cooperation, since we will be looking for interactions between individuals that could be represented in a graph as lines (relations) and nodes (agents). Network theory defends a principle of interdependency between the agents and their actions. Cooperation implies the interdependency between individuals to reach a goal. The actions of all the individuals interfere with the final benefit of cooperative relations. The relational ties established in a network are means by which material resources or information circulated. So, these ties are crucial and indicate in what is the cooperation based. A network of contacts itself configures opportunities of cooperation and conditions the individual action (WASSERMAN 1999, 4).

These theoretical assumptions presume the resource to statistical and graphic methods in order to allow interpretation of cooperation mechanisms and to provide network analysis. This dissertation will thus be enriched by statistical analysis of interactions and of values implied in trade and finance business. A network analysis software, GUESS – The Graph Exploration System will be also used as well. GUESS is an exploratory data analysis and visualization tool for graphs and networks. An interactive interpreter binds the text that you typed in the interpreter to the objects being visualized for more useful integration. GUESS also offers a visualization front end that supports the export of static images and dynamic movies¹⁶. The analysis of content will also display an important role in the interpretation of data, namely in the study of reputation and gossiping and in the contents of different type of relationships, present in the commercial correspondence (BARDIN 1979).

¹⁵ To consult the technical features of the database and a manual to its performance please confront (CARVALHO 2010). The online database can be consulted in <http://timelink.fl.uc.pt/mhk/dyncoopnet/show/search.vm>.

¹⁶ <http://graphexploration.cond.org/>

II. Diachronic evolution of Simon Ruiz network and partner choice criteria (1553-1597)

As a historical phenomena, a network evolves through time. It has a specific birth certificate, a life cycle and, eventually, an end. In this chapter, we will try to approach the lifecycle

of Simon Ruiz business network. Following the research approach of Sanjeev Goyal, our theoretical assumption is based in the idea that there is a '[...]' framework where individual entities create their own links with others and this shapes the structure of social and economic interactions (GOYAL 2007, 6).' For this purpose, a few considerations about the position of the individuals in the network must be presented, in order to understand the complexity of the network setup:

1. each individual is part of different trading networks, throughout the chronology in study. This fact conditions the variability of individual behavior in the network;
2. each individual will have different connections and commitments within the network which vary through time, in general;
3. within a network, the same agent may achieve different degrees of cooperation, depending on his business interest at the moment;
4. the total number of agents is not present in the network simultaneously. They contribute to the network for different periods of time;
5. the position of an agent might be marginal in one network and yet central in another. His position in a given network did not imply, thus, a corresponding social or economic significance in the business world (POLÓNIA 2008).

The main goal of this chapter is to present and to observe the evolution of Simon Ruiz network diachronically, focusing on three particular features:

- The relevance of network analysis for the historical interpretation of its evolutionary dynamics;
- The influence of historical events and conjunctures in the network dynamics;
- The influence of individual characteristics of the network members in the decision-making process of partner choice. The individual variables under observation will take into account attributes such as nationality, confessional affiliation, family connections, place of residence, as well as relevant socioeconomic characteristics such as profession, titles or positions. These variables will be analyzed in relation with conjunctures and economic and also with economic and financial performances in which agents were involved, namely financial exchanges and commercial transactions.

In the following pages, one will present graphs revealing different moments of Simon Ruiz network. The selected chronological frames will assure yearly snap shots for the more relevant instants of the network evolution, which criteria will be explained each period under scrutiny. One will try to follow a thin time gap between them, aiming to capture tenuous and

profound alterations in the network topology, as well as moments of economic stability and disruption.

In this evolutionary dynamics one must consider both the diversity of agents, the establishment of new links and the abandonment of others. On the other hand, if human interactions vary in time it is essential to understand the social, economic and cultural background of the agents which are included in the network (POLÓNIA 2008). In this sense, we will try to consider both how agency issues and the social capital of individuals are related with network evolution and network structure.

However, studying individual characteristics of the agents is not an easy and sometimes not even a feasible task, since the data sources do not give us a complete information on the following variables: religious affiliation, nationality and place of activity, jobs and other social relevant information. Crossing information with literature and commercial letters is the only way to provide additional information, even so not always available.

1. The initial years

Simon Ruiz was laying the foundations of his company when, in 1557, Philip II decreed his first bankruptcy - '[...] la conversión de la deuda flotante en consolidada era un respiro, aunque aparente, pues ponía un remedio temporal a su depauperada hacienda. (MARTÍN ACOSTA 1992, 80)'. Nevertheless, the mid sixteenth century was the time when Simon Ruiz was beginning his autonomous career as a successful business man. The first acts of Simon Ruiz activity date from the 5th of July 1553. The only document remaining from this year is a bill of exchange between Rinaldo Giovan Battista Strozzi (the taker) and Andres Giovan and Tomaso Spínola (the payers) in Lisbon. These Florentine and Genoese agents, established in the Iberia Peninsula, acted as mediators of money transference between Simon Ruiz, based in Medina del Campo, and his first representative, his brother André Ruiz, based in Nantes. The amount of a thousand *scuddi di marco* should be payed to André in the August fair of Lyon¹⁷.

According to Henri Lapeyre, at this time, and since 1545, Simon had established commercial relations with Yvon Rocaz from Nantes, who would send canvas from Brittany for him to resell them at the Medina del Campo fairs (LAPEYRE 1955, 60). In this same year, 1553, he constituted a society with two business men from Burgos, Andrés Marino and Francisco de Zamora, according to which they should buy specific textile raw materials in thread, such as

¹⁷ Bill of exchange ASR-01.1553.001.

pabillo and *coutil* (LAPEYRE 1955, 61-62). His brother André intermediated the acquisition and expedited it to Castile. André was taking part in the fabrics trade, namely its export from France to Spain.

'Il faisait partie d'une grande compagnie, qui comprenait un autre nantais d'origine espagnole Jean de la Presse, son frère Vitores Ruiz de Medina del Campo, et son cousin Francisco de la Presa de Burgos. C'était là une habile combinaison, car les deux associés d'Espagne résidaient aux points stratégiques, l'un dans la ville des foires, l'autre dans la métropole de la laine et des assurances maritimes. (LAPEYRE 1955, 48)'

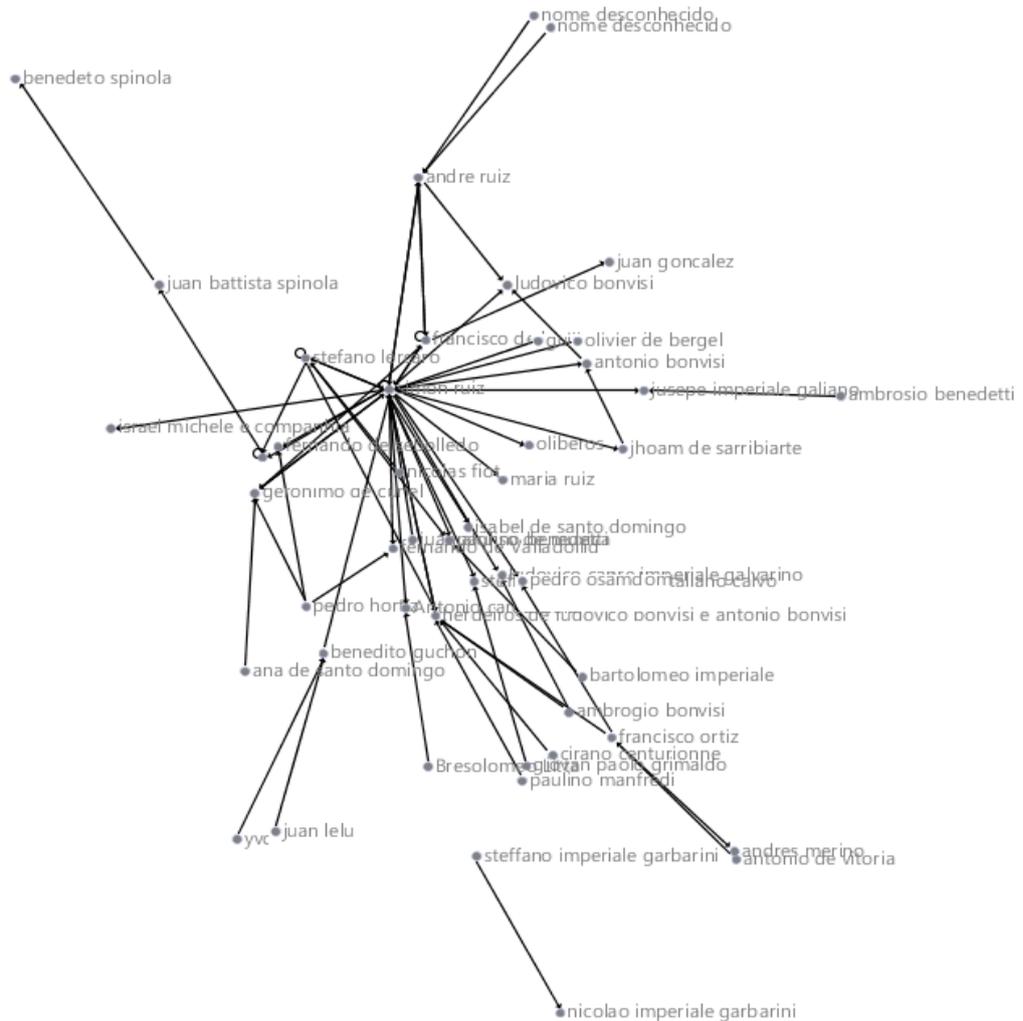
But Andre also acted as a middleman of Spanish merchants in Spain and in Rouen, in textile import-export business. This may seem the kind of connection which tied him to his brother Simon, as sustained by the event described above.

Fig. 2 – Simon Ruiz network in the years 1558-1559

Number of nodes: 53 Percentage of the total number of nodes: 0.86%

Number of edges: 44

Average degree: 1.66



Only for 1558 there is again available data in the Simon Ruiz company archive. According to figure 2, Simon Ruiz has, on 1558-1559, 53 direct and indirect partners in his network. Direct partners are only 15, which means that the majority of the partners (71.7%) are indirect. The first partners of Simon Ruiz are the ones who represented him directly or acted as his beneficiary or taker in bills of exchange. In this sense, he is highly dependent from a small group of people and their contacts, which he does not control. Reflecting this characteristic is the number of average connectivity or degree. The low value (1.66 partners) reveals a rigid structure, where each one performs a certain role oriented to another specific individual. There is not a great interaction in the network. In this specific case, at the point where the network is beginning to gain shape, the structure is not very oiled and dense. The information travels in restricted circuits and it was not shared by everyone. The network is profoundly disconnected. However, one must be aware that many of these agents could interact in other networks not apprehended

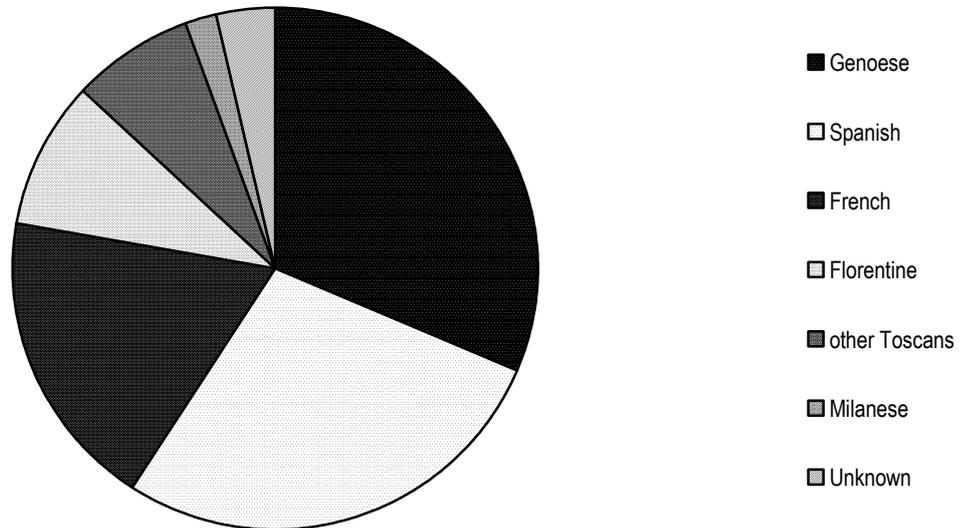
by this specific graph. In fact, the network of Simon Ruiz could be perceived as a sub-graph of a great graph that was the network of European trade and finance at the time.

Comparing the total number of partners with the total amount of 46 identified acts, one can conclude for the existence of multiplied participation of agents in diverse acts, since the presence of more than one individual in each act is required: a bill of exchange or a letter implies at least 2 different agents involved. So, it is clear that in the beginning of Simon Ruiz network some individuals participated in some of these acts more than once or twice. Specifically, 63.5 per cent of the partners in 1558 and 1559 only intervene once in a act in the Simon Ruiz documents, while the rate of those who intervene twice or from 3 to 10 times is 30.6 per cent of the total. This means that most of the agents had a sporadic role in this network. The remaining 5.8 per cent correspond to those who intervened more frequently in the business network. The ones with a leading role are André Ruiz (with 40 interactions in the network for the period in study), and Antonio and Ludovico Bonvisi of Lyon (the first with 36 and the second with 20 references).

As one described above, André Ruiz was the main contact for the intermediation of goods and payments not only in Nantes, but also in the fairs of Lyon and Besançon, where he had privileged contacts, namely with the Bonvisi in Lyon. While André was the main beneficiary of the bills of exchange where Simon Ruiz was the donor, the Bonvisi were almost always the payers of Simon Ruiz's money in circulation. Even if this is the standard situation, some punctual contacts were made in the Besançon and Antwerp fairs.

In this analysis, it is in fact essential to evaluate the nationality and place of residence of the agents involved in the network at this period.

Chart 1 - Nationality of Simon Ruiz partners in 1558-1559



Source: Bills of exchange and commercial correspondence of the Archivo Simon Ruiz.

The majority of the network partners are Genoese, who after the Castilian bankruptcy of 1557, had the opportunity to present themselves as the great financiers of the Crown, after the effects this event provoked on the financial health of the Augsburg bankers (EHRENBERG 1955, 75). In this lot, names as the *Spinola*, the *Imperiale*, *Grimaldo* or *Centurione* appear frequently in this time period, although each of those individuals participated punctually, in one or two acts. These names began to appear in the Spanish economic life already in the reign of Charles V, side by side with the great bankers of the emperor - the Fugger, the Welsers or the Hochstetter. From this sample, we could mention the participation of Nicolo Grimaldo, his brother Giovan Paolo Grimaldo or Steffano Centurion. The presence of these Genoese in the Court of Valladolid, almost all from the old Liguria aristocracy, was mutually profitable. As claims Alonso Garcia, 'América proporcionaba importantes oportunidades de negocio y promoción mientras que los Genoveses formaban un grupo con una notable capacidad para proveer regularmente de productos, dinero y noticias en los escenarios clave para la Monarquía' (ALONSO GARCIA 2011).'

After the suspension of the Antwerp's payment fairs together with the confiscation of 2 deliveries of silver in Antwerp, the Spanish Crown inflicted a tough stroke in the Fugger's capital (EHRENBERG 1955, 75). The Genoese were far more cautious and after the bankruptcy they

managed to convince Philip II to guarantee the amount of debt and continued to preserve the privilege of trading in any Habsburg dominium with the same conditions of the Castilian merchants.

Richard Gascon highlights the role of Italian bankers in the world's financial and commercial set, where they “[...]jouissent d'une primauté voisine du monopole dans quelques secteurs (GASCON 1971, 203).” Given the large triangular connection with the heirs of Antonio and Lorenzo Bonvisi (i.e., high clustering coefficient), they both seem to be a bridge between two worlds - Spain and Italy. Simon Ruiz appears, in this context, making payments above all. Although we have no data on the destination of this money, or the reasons for its transference, one knows that the Bonvisi were great merchants of luxury goods such as silk cloths, filet of gold, silver and silk, and heavily connected with the trade of luxury goods of Milan and Venice shipped to the Iberian Peninsula (GASCON 1971, 218). Giving attention to details, these cooperative relationships seem to be reciprocal, since the evidence in letters addressed to Florence by Simon Ruiz emphasize the benefits of the trade of Spanish wool and cochineal, given the strength of the textile industry in the north of the Italian peninsula (RUIZ MARTIN 1965, CIV).

The Italians in this network performed the role of takers of Simon Ruiz to the fairs of Lyon and Besançon (since the Genoese were expelled from Lyon exchanges¹⁸), which their payers were other Genoese who were still established in Italy. Other agents performing this role were the French. Names like the Osandom, Nicolas Fiot or Guillome Salignot were still operating in Simon Ruiz network after the French bankruptcy of 1557. The sporadic frequency of their contacts with Simon Ruiz and their disappearance in the decade of 1560, as we will see below, is related with a decline in the exchange business of the French financiers. This fact seems to be correlated with the insolvency of the «Grand Parti» in 1558. François I attracted private loans to the French crown, in the previous years to sustain the war with Spain, by paying creditors with fiscal revenues of the Kingdom – toll rights in the villages and in the country, monopolies or trade privileges (CHAUNU 1977, 298).

In such time, Simon was still linked to the trade of cloth and wheat and their import to the Iberia Peninsula. He continued acting very closely with other French from Nantes, as Yvon Rocaz

¹⁸ ‘ (...) around the thirties of the sixteenth Century, as French merchants and the Italian colleagues alike were clearly boycotting the Ligurian financial operators, the Genoese bankers were impelled to set up other fair locations. In 1535, a Genoese senate act established that exchange fairs were to be held in Besançon, in the Free County, under the protection of the emperor Charles the Fifth.’ In (MARSILIO 2008, 3).

and his partners Jean Le Lou and Benedito Guchon, in Lisbon. Guchon was Ruiz, Rocaz and Le Lou representative in the selling of 428 tons of Brittany wheat in Lisbon in 1558¹⁹.

Even so, the second largest national group of business contacts of Simon Ruiz was composed by his fellow countrymen, who were already established in commercial activity, like Geronimo de Curiel or Francisco Ortiz. By far, these two Castilians represent two types of roles performed by these traders in this network. On one hand, Castilian agents like Curiel were the main contacts of Simon Ruiz in Antwerp²⁰. Like Curiel, all of them in our sample lived constantly divided between Burgos, Medina del Campo and Antwerp. They were not settled abroad, and maybe this feature was an advantage to the business contact with Ruiz who traded Flemish textiles, from which these agents were importers. On the other hand, agents like Francisco Ortiz have built a good credibility also as bankers, acting as takers mostly to the Italian bankers in the bills of exchange with destiny to Lyon or Besançon²¹. In the particular case of this agent, he was also the main heir of Andres Merino, with whom Simon Ruiz had a partnership in the draperies business.

To underline is the fact of three women appearing in the beginning of the network lifecycle, with some relevant role. Ana de Santo Domingo is Gerónimo de Curiel's wife and, in her husband's staying in Antwerp, she is the one acting as taker of the bills of exchange payables in Antwerp by her husband²². Her sister, on her hand, Isabel de Santo Domingo is married with the elder brother of Simon in Nantes, and Simon is the responsible for tutoring her assets in Castile, as well as the ones from his sister Maria. He uses their fortunes to invest in wheat trade to sell in Lisbon in 1558, by the hands of Benedito Guchon²³.

For these first years of activity, the bills of exchange data collected by the Portuguese team of Dyncoopnet do not present a huge qualitative set of information. It is sparse and incomplete. Still, one can underline that the first years of an autonomous Simon Ruiz company activity are profoundly oriented to trading activities with textiles and wheat from the Northern France, where he had a precious contact: his older brother. The business money transfers circulated between Medina del Campo, Antwerp and the fairs of Lyon. His business moved in this geographical triangle through the hands of Italian and Castilian financiers who profited with the exchanges, because of the rising quantity of silver arriving to Seville from the Spanish *Indias*. The building of Simon Ruiz network was made slowly, first with the establishment of non-permanent

¹⁹ Letter from Benedito Guchon to Simon Ruiz on the 27th August 1558. Letter - ASR, 001.1558.050.

²⁰ Other agents performing the same role are Fernando de Sebolledo or Fernando de Valladolid. Bill of exchange – ASR – 007.1558.008 or 001.1558.016.

²¹ *Vide*, for instance, bill of exchange – ASR – 001.1558.013.

²² Bill of exchange ASR-001.0558.004.

²³ Letter from Benedito Guchon to Simon Ruiz on the 23rd July 1558. ASR-001.1558.049.

commercial partnerships and, in consequence, with the rational and surgical decision to connect with the biggest and more solid financial houses of the time, like the Bonvisi of Lyon, as the repeated interactions with them seem to prove.

2. The first expansion period: 1560-1564

According to some historians, the year of 1559, accompanied by the Spanish and the French defaults of 1557, had transformed European economic panorama for good²⁴. The great bankers from Augsburg collapsed and one of the economic hearts of Europe, Antwerp, saw his pulse rhythm beating slower as the third quarter of the century arrived. The financial center deeply depended on the Spanish silver shipments to the Southern German bankers established there. 'A Anvers, c'est le Krach brutal, dès le second semestre de 1557; les banques cessent pratiquement leur activité, attendant les instructions des maisons mères, des grands chefs à Augsburg, Nuremberg, Florence, Gênes. En Allemagne, c'est le panique (MARSOLIN 1977, 718).' Wallerstein declares Antwerp's death certificate in 1559 (WALLERSTEIN 1990, I, 201). Nevertheless, the data now analyzed will demonstrate that this city was still a good business opportunity for this network.

The year of 1559 brought peace to Europe. The Treaty of Cateau-Cambresys established peace between the Habsburg and the Valois and restored some optimism in the commercial and financial European markets, namely due to the inflation provoked by the flooding of American silver in trade and in financial fairs (SPOONER 1968, 14). In this sense, the network of Simon Ruiz accompanied this growth tendency in the next five years, from 1560 to 1564, with the exception of 1562.

²⁴ (ARRIGHI 1994) corroborates the thesis defended by Braudel and Ruiz Martin on the beginnings of the «Age of the Genoese» as a turning point in the organization and trend of European finance, after 1557 (p. 125). In the classic article *The European financial crisis of 1559*, Henri Hauser sustains that 1559 was a point of economic drawback for the regions which acted as leading centers in the European finance, as Spain, France, or Flanders (HAUSER 1929-1930, 254). Lynch stated that the Treaty of Cateau Cambrésis was a symbolic confirmation of Spain's prestige in the Southern Europe and its weakness in the North (LYNCH 1964, 164). Frank Spooner called the attention for the wave of defaults resulting from the Spanish bankruptcy of 1557 in the Low Countries, Naples, Milan or in the French Monarchy (SPOONER 1972). Van der Wee recognizing the profiting years of the 1560s in Antwerp or Lyon, wrote 'The crisis of 1557 broke the expansion for good' (VAN DER WEE 1963, 221). Pierre Vilar defined the years of 1557-1559 as the greatest crisis of the sixteenth century (VILAR 1976, 161). By the end of the twentieth century, Kindleberger was proving that nothing remained the same after Cateau Cambrésis, which was a result of a unbridled run to the European credit market and the successive defaults of Spain and France (KINDLEBERGER 1998, 20).

Table 3 – Simon Ruiz network yearly growth, 1560-1564.

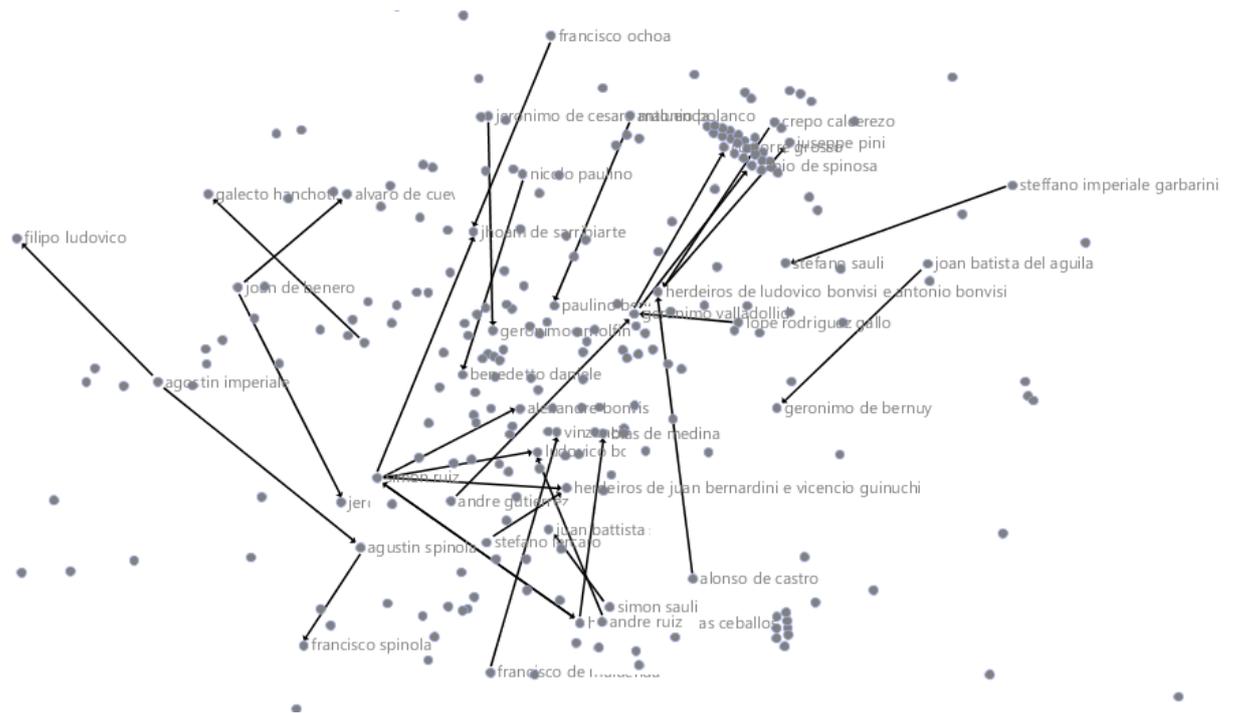
Year	Number of nodes	Nodes' Growth rate (%)	Number of edges	Edges' Growth rate (%)	Average degree	Growth of the average degree
1560	25	92.3	19	111.1	1.52	0.14
1561	49	96	45	136.8	1.84	0.32
1562	42	-14.3	26	-42.2	1.24	-0.6
1563	62	47.6	63	142.3	2.03	0.79
1564	83	33.9	72	14.3	1.83	-0.2

Source: Bills of exchange and commercial correspondence of the Archivo Simon Ruiz.

The first two years of this period in the network evolution were characterized by an immense growth in number of agents within it. In 1560 and 1561 the population of the network almost doubled in each year. The number of edges accompanied this trend with a slow growth in the connectivity of the network linking. Each node presented 1.84 links/ each. Still it is not a very dense network. And we must consider that the number of contacts decreased specially in the year of 1562. 1562 was an *anno horribilis* to the European financial and commercial markets. Lyon knew the bitter taste of the civil war, the French religion wars between the Catholic majority and the reformed Protestants. According to Richard Gascon, annual and monthly incomes on the entrance of trading goods in Lyon were reduced from about 58 000 *livres ternoises* to 24 000 (GASCON 1971, 597). The Protestant occupation of Lyon from April 1562 until August 1563 and the first civil war provoked a collapse. The fall of revenues in the fairs was brutal and the fairs were only reestablished in the last semester of 1563 with the favorable revenues of 1562 (GASCON 1971, 596). In this brief period, the great merchants had to face monetary anarchy and the degradation of payments in the Lyonnaise fairs.

On the other hand, the disorder of the Castilian financial fairs was already a concrete reality. The Castilian fairs were completely dependent from the arrival of the Spanish Indian fleets to Seville in order to guarantee capital liquidity. The delays on the silver arrival implicated the delay of fairs or, even worse, their disappearance of the annual calendar of the European fairs. In 1562, the king Philip II ordered to end with the payment fairs and this measure was maintained until January 1563 (RUIZ MARTIN 1986, II, 272).

Fig.3 – Simon Ruiz network in 1562



Analyzing it in detail, and looking to what happened in our case study, the year of 1562 we perceive the total disconnection of the network and how few were the relations established with agents in Lyon, namely the inheritors of Ludovico e Antonio Bonvisi, who were the most frequent contacts of Simon Ruiz and his partners in the payment and exchange in Lyon. If in the previous year, they had participated in 41 different acts of exchange, in 1562 the frequency of the contacts had diminished to 31 and in 1563 only to 2 participations in bills of exchange.

The year of 1563 witnessed, nonetheless, a growth in the number of partners in the network in a rate of almost 50 per cent. The strategy was then to deflect the payments through Seville. The raising in the number of edges of the network was impressive: it more than doubled. For the first time, the average degree achieved 2 links per node and the number of edges surpassed the number of nodes. Even so, the star network topology was maintained in the whole period.

Fig. 4 – Simon Ruiz network, 1560-1564

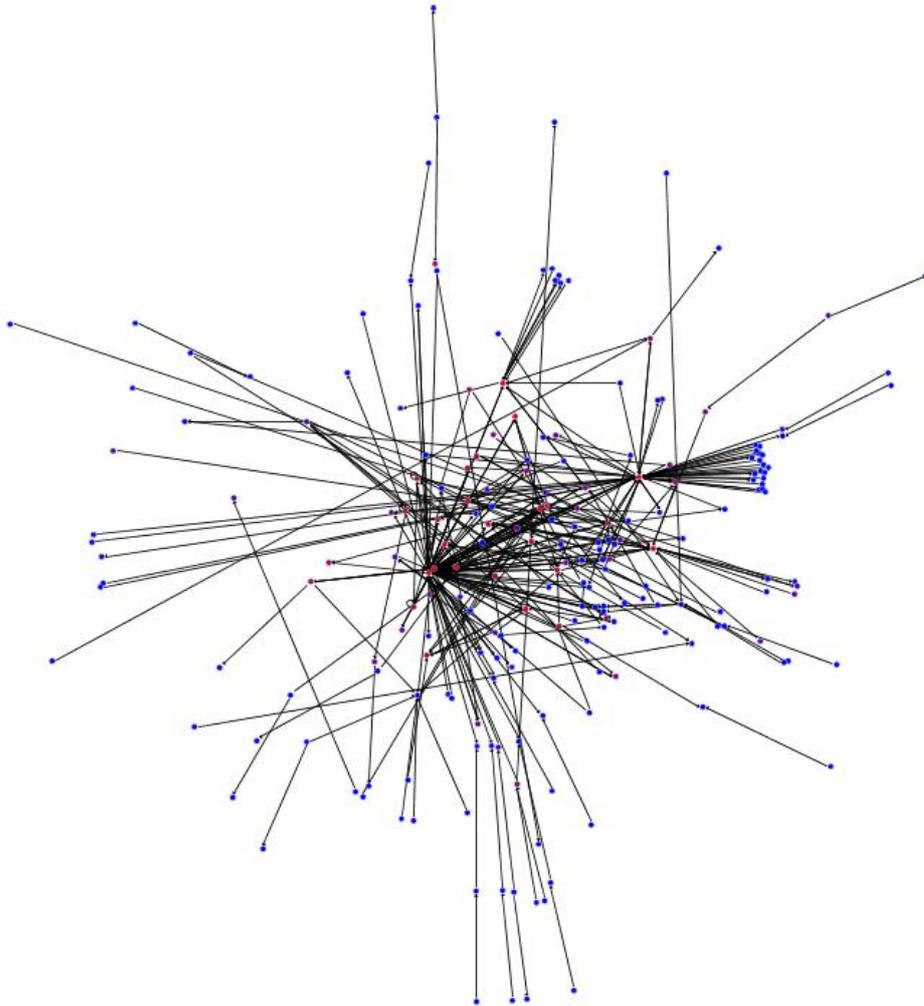
Number of nodes – 225 % of the total nodes – 4.4%

Number of edges – 245

Average degree – 2.18

Percentage of new partners – 92.9%

Percentage of old partners – 7.1%



Even with an exponential growth rate in this five year period, the above graph only gathers about 4.4 per cent of the total number of individuals that in the second half of the sixteenth century integrated, at some point, the Simon Ruiz company network. Most of these agents were not directly connected with Ruiz himself. Only 19.1 per cent of the nodes maintained direct contacts with Simon. His business depended on indirect contacts with the rest of the agents. Ruiz continued to appear regularly in bills of exchange, mainly as a donor to the

payments in Lyon fairs, and seldom as a beneficiary of some agents in Lyon, as the Bonvisi²⁵. This indicates a direct reciprocity built within these agents who were investing in Spain, either in the colonial trading, or in financial Royal products. These acts could also derive from the revenues of Simon's trading profits, which were sent by the intermediaries in Lyon.

The interest of Simon in colonial trading is demonstrated by his role as a taker or a payer of bills of exchange to and from Seville. The correspondence with Portugal shows the same lines of action, as it is perceived in letters exchanged with Antonio Gomes. The interest of Portuguese agents participating in the West Indian business seems to have been ensured by the hands of Castilian bankers. In 1563 the narrowness of capitals in Lisbon was a problem to ensure Portuguese investments in Seville. Antonio Gomes wrote to Ruiz, advising Simon he had sent him a bill of exchange to his representative in Seville, either to invest or to pay some goods which reached the Andalusia port from the Spanish Americas²⁶. The same kind of relation is established with other agents in Portugal as Blas de Medina, Antonio Calvo or Gregorio de Sanctotus. As a strategy to join the American venture and the Sevillian market, legally reserved to the Spanish subjects, it seems that Portuguese merchants entered in informal partnerships with Castilian merchants like Simon Ruiz, at least before 1580 (STUDNICKI-GIZBERT 2007, 26).

If we look attentively to the global network topology, we see it is based in 3 stars in this period. Although Simon Ruiz continues to be the center of one of them by the reasons explained above, his total degree is not the greatest (43 links). The biggest star in this period is reserved to Geronimo de Valladolid, the representative of Simon Ruiz in Seville (51 links). Far distant appear the Bonvisi of Lyon forming a smaller star with 17 links. This fact illustrates a turning point in the business strategy of Simon Ruiz, who perceived the potential of trading American colonial goods, especially cochineal as the correspondence exchanged with Florence agents indicates (RUIZ MARTIN 1965, CIV). As Frank C. Spooner claims, the 1559 crisis had as a consequence the definitive relocation of the economic center from Central Europe to a vital and massive Atlantic trade with the New World: 'The way to the future is (...) on the other side of the Atlantic and in the seven seas of the world (SPOONER 1968, 34).' It is in this context that the growing centrality of Seville should be understood.

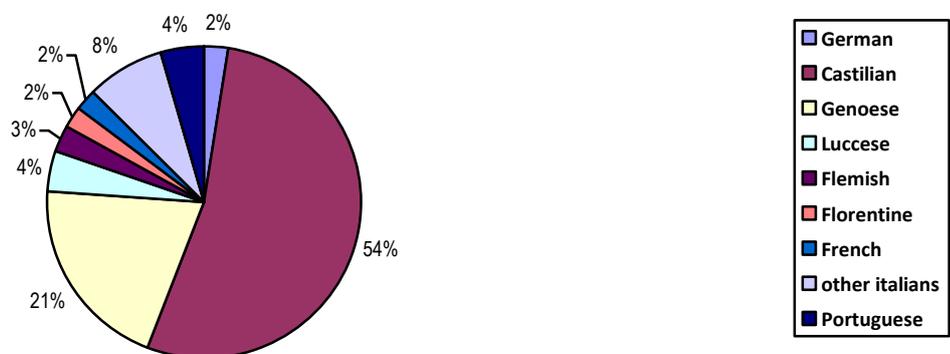
The economic dynamics of this period implied a rotation in the business strategy, which can be verified by the percentage of new partners appearing in the network. Almost the totality of nodes appears for the first time, in this first half of the 1560's. Seville and Geronimo de Valladolid were now important vertices of the Ruiz trading activities, who in 1560 established a partnership

²⁵ For instance, bill of exchange ASR – 001.1562.010.

²⁶ Letter from Antonio Gomes to Simon Ruiz on the 19th July 1563, in ASR-002.1563.128.

with his brother Vitores, from Medina del Campo, and Francisco de la Presa, an insurance agent in Burgos²⁷. Both decided to invest their regular profits in the colonial trade. The triangle that has sustained, during this first half of the 1560 decade, Simon relationship with the Bonvisi bankers also passed through Seville, where the products of the Hispanic colonies flocked in large quantities. Geronimo de Valladolid assumes a pivotal role in this strategy in two distinct ways. He redirects the profits of Simon Ruiz to the Lyon fairs and to pay financial debts usually to the Bonvisi, but also to other bankers like Filipo Sauli, the heritors of Buenaventura Micheli and Geronimo de Arnolfini. Geronimo de Valladolid frequently sent profits of the business and received new investments to and from their partners in Medina del Campo. Using his autonomy as the representative of the Castilian partnership, Geronimo also performed the function of borrower to other Castillian merchants, who needed money in Seville²⁸. He formally appears as creditor of Diego de Gylles, Julian de Raverie, Juan Sanchez Bueno, Alvar Sanchez, Bartolome de la Vega, Francisco Ruiz de Agua Nevada, Sancho de Quintanaduena, and many others²⁹.

Chart 2 - Nationality of Simon Ruiz partners, 1560-1564



The percentage of unknown individual nationalities for this period is 10.2% (23 cases).

The percentage of known individual nationalities for this period is 89.8% (202 cases).

Source: Bills of exchange and commercial correspondence of the Archivo Simon Ruiz.

²⁷ The three of them appear associated, acting as takers or payers, in the bills of exchange to and from Seville, since 1560 and along this second period. See, for instance, the bill of exchange ASR-001.1563.042.

²⁸ Bill of exchange ASR-001.1564.056.

²⁹ For the complete list please check Geronimo de Valladolid biography in the Portuguese DyncoopNet's database in <http://timelink.fl.uc.pt/mhk/dyncoopnet/id/rp-robot-103>.

The new range of partners had notoriously multiple backgrounds. More than a half were actually Castilians, and about 20% Genoese. The other national groups are further less representative.

Castilians display several different roles within this network between 1560 and 1564. Even if, in the main European financial places, as Lyon or Antwerp, these 5 years (excepting 1562) had some capital fluidity, the financial and economic situation of Castile in the 1560s was already very difficult. Castilian fairs were constantly delayed and from a situation of 4 fairs per year, the tendency was to be reduced to one and usually delayed. The situation would be even worse in the second half of the decade. There was no capital abundance (RUIZ MARTIN 1986, II, 274).

At the end of the 1550s in Seville was already very complicated in terms of the financial fitness of many merchant bankers, due to the seizure in particular trading and finance revenues, perpetrated by the Crown in 1553, 1555, 1556, 1557 and 1558 with the goal of wiping out the chronic deficit of the Royal chests (LORENZO SANZ 1986b, I, 235). In Castile, the decade of 1560, is known as a period of commercial houses' defaults. Some private bankers were bankrupt, as were the medium merchants, who were living from limitless credit for 30 years. Even if they had not a fortune made of trading activities, they began to concede loans to other merchants with minimum sustaining funds and guarantees. Without the ability of recovering granted loans, they easily began to be ruined. In this sense, the Castilian financial operations were concentrated in the hands of some foreign bankers and a small number of strong Castilian merchants. In a country dependent of the financial health of the *asientistas*, the big crisis of the 1550s left some severe frailties after the failure of some of them. On the other hand, the Crown's hunger for successive loans, its lack of payments and direct intervention in proroguing the payment fairs generated a massive amount of protested bills of exchange, which overshadowed the trust in business and led to successive private defaults (ABED AL-HUSSEIN 1986, II, 237-259).

This financial crisis largely reduced the credit and capital for trading. Carande explained that after 1553, when the Spanish Crown was replacing its German moneylenders by the Genoese, this deeply reduced the loans to private merchants (CARANDE 1987, I, 325). There was also an increase of loan solicitude by the Castilian aristocracy, which seemed less risky than to concede credit to merchants.

The conjunctural equilibrium of the financial health of the Castilian merchants was quite tenuous. But still, some of the great merchants from Castile disposed from accumulated wealth to continue profiting from the colonial trade, the silver inflation and the Crown *asientos*. Eherenberg

refers that the Spanish merchants in the 1557 bankrupt were particularly well treated and encouraged to participate more actively in the Crown affairs (EHRENBERG 1955, 176). Benassar enumerates a small group: the Espinosa, from Medina de Riosecco, the Curiel de la Torre, the Ortega de la Torre or the Maluenda (BENASSAR 2001, 29).

In the case of the Simon Ruiz network, at this time period, it is possible to point out as partners, Gerónimo and Alonso de Espinosa in Antwerp, Fabio de Espinosa in Seville, Francisco de Espinosa in Medina del campo, Ludovico and Juan Curiel de la Torre in Medina del Campo, Andres, Christoval, Geronimo Cesar and Francisco de Maluenda exchanging in Medina del Campo.

Andrés and Francisco de Maluenda in a banking partnership appear in this network taking Simon Ruiz money to the Lyon and Bezançon fairs for ten times, and there were linked with the heritors of Buenaventura Micheli and Geronimo de Arnolfini, one of the richest houses in Lyon³⁰. Ludovico Curiel de la Torre is the payer in Medina del Campo fairs of the money transfers from Geronimo de Valladolid in Seville to Simon Ruiz, Vitores Ruiz and Francisco de la Presa³¹. Juan Curiel de la Torre is implied in both money traffics for nine times in this period, appearing as a payer of Simon Ruiz in transfers sent by the Bonvisi³² or receiving money from Seville, whose payer was Simon Ruiz and the taker Geronimo de Valladolid, from some debtors as Gabriel de Santa Gadeja. He was considered as one of the greatest bankers of Castilian fairs in this chronology (EHRENBERG 1955, 176). The Espinosas began to establish connections in this network in 1563, controlling the money circuit between Seville and Antwerp, linking both representatives of Simon Ruiz, Geronimo de Valladolid and Fernando de Frias Ceballos respectively³³.

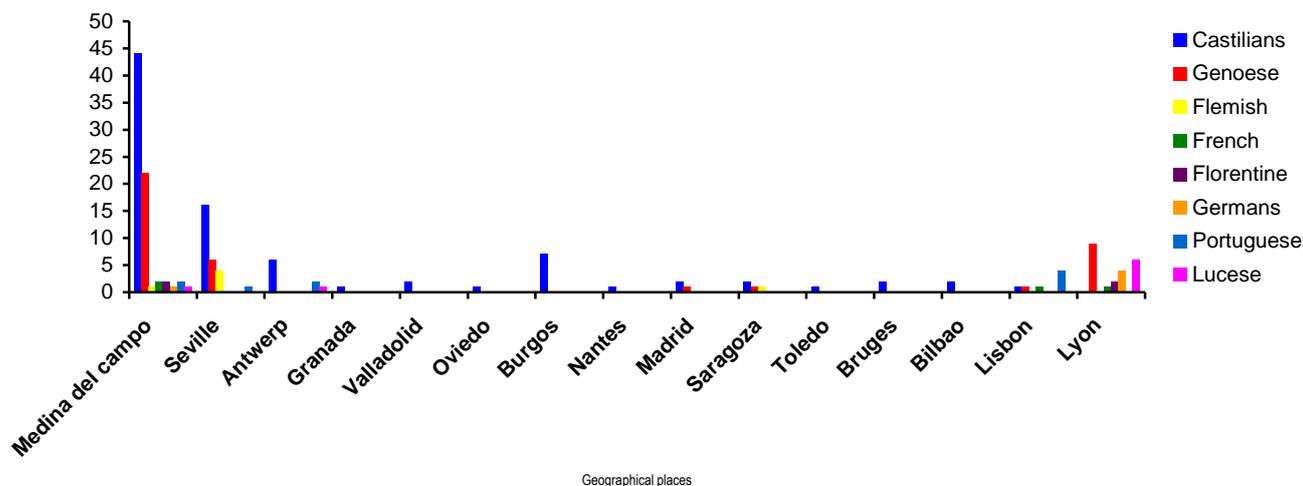
³⁰ For example, the bills of exchange ASR-01.1560.011 and ASR-01.1564.036.

³¹ Bill of exchange ASR-01.1564.060.

³² Bill of exchange ASR-01.1560.021.

³³ Bills of exchange such as ASR-01.1563.021, ASR-01.1563.002, ASR-01.1564.063.

Chart 3 - Geographical distribution of simon Ruiz partners by nationality, 1560-1564



The percentage of unknown individual data is 27.1% (61 cases).

The percentage of known individual data is 72.9% (164 cases).

Source: Bills of exchange and commercial correspondence of the Archivo Simon Ruiz.

As we can check in the graphic above, Castilian's activity in the network was mainly based in Medina del Campo and Seville, trade and finance centers of the Spanish economy, but also in Burgos, birth place of an elder lineage of Spanish merchants and center of European maritime insurance. Spanish merchants were also placed in Antwerp and in Bruges. It is known that some of the Spanish merchants in Bruges maintained their activity, even the general migration to Antwerp prevailed. Here, they never had a formal colony established. Still agents like Fernando de Frias Ceballos were there to represent Castilian houses in import/export business or in the financial market. In the case of Simon Ruiz affairs the links with Alessandro Bonvisi shows that Ruiz also searched for credit in the Antwerp market³⁴. Ceballos was a formal representative of Simon Ruiz until 1570, fact that becomes irrefutable not only in the documents analyzed, but also in the correspondence of Ruiz with Antwerp, studied and published by Vasquez Prada (VASQUEZ PRADA s.d., 19). The commercial concerns of Ruiz at this period seems to have been the textile market (VASQUEZ PRADA s.d., 76) and the harbor closing to the English wool in 1560 (VASQUEZ PRADA s.d., 54), opening an opportunity for imports of the Castilian raw material, even if the Meseta activity was already declining (VICENS VIVES 1985, 128).

The Genoese *asientistas*, booming as bankers of the imperial policy of the king of Spain, continued to be privileged partners in the network, ensuring the company's reputation, once established regular contacts with the business and financial elite of Europe. Between 1560

³⁴ Bill of exchange ASR-01.1560.024.

and 1566, Philip II authorized the exit of silver species outside Spain, which gave even more power to the Genoese (RUIZ MARTIN 1990, 15). They were in every key points of the economic life in Europe: Medina del Campo, Seville, Lyon and Antwerp. In Medina del Campo we observe their activity in the fairs, even if they were settled in Valladolid. At this point, they had built a powerful national network among the finance and trading world of the time.

‘La funcion central de los genoveses en España, puesta de manifiesto desde los años claves del tránsito del siglo XV al XVI, fue la de promover la interdependencia de espacios económicos, la division internacional del trabajo, y las formas diversas de integración social que redujeron las distancias entre unas regiones y otras, sin que éstas perdiesen el vigor propio de sus contextos locales. (IGUAL LUIS 1997, 299)’

Their presence in the Spanish Court has already been discussed in this chapter and it is important to realize the connections established with Antwerp, where the Spanish silver arrived. Sometimes the capital was redirected from Spain to Lyon, and especially the Besançon fairs, which were created and directed by Genoese. During the period between 1560 and 1564, and due to conjunctural circumstances which heavily conditioned economic activity, the place of Seville and the activity of Geronimo de Valladolid constituted the possible escape for the Genoese capital circulation. The repeated interactions with Esteban Lercaro, Jacomo Grimaldo or Lazaro Doria consolidate this assumption³⁵.

The Genoese presence in Seville was already a fact during the sixteenth century and their permanent fixation dates back to the thirteenth century (GIRARD 1933), but it was after Columbus’ arrival to the New World that they fostered the entrance in the Atlantic trade (PIKE 1966). They assumed a vital importance in the destinies of the «Catholic Monarchy». According to some authors, Genoese promoted a credit system considered essential to an enlarged Empire, at the same time directly financing an exhausting military effort and employing their own naval resources to establish the best communications with Spanish territories in Europe and abroad (HERRERO SANCHEZ 2004)³⁶.

The presence of Genoese in Saragoza, a center of Meseta’s wool distribution and textile industry, already in decline, is both insignificant and curious. Even if direct information regarding these Genoese agents’ is not present in our data, the hypothesis of them being wool buyers for the Northern Italian luxury cloth industry seems acceptable. Nevertheless, the presence of

³⁵ E.g., bills of exchange ASR-01.1562.030, ASR-01.1561.036, ASR-01.1563.037.

³⁶ The issue of the relations between the Genoese and the Spanish Crown or the presence of the Genoese in Spain and its reflections in Europe has been profoundly studied and it is not our aim to give a detailed state of the art about it. Even so, please check the bibliographic reflection made by (IGUAL LUIS 1997)

individuals like the Pinello indicates the presence of a bourse of trade business man, not entirely dedicated yet to the financial market³⁷.

Even if Ruiz Martin assumes they constituted a strong, but closed system (RUIZ MARTIN 1970, 84-85), the Genoese appear interacting permanently with the Castilians. On one hand, Castilians were great intermediaries to transfer capital to Antwerp or to Lyon (from where they have been banished by the French king in 1530s). On the other hand, the money they loan to the Spanish king is financed by the deposits of Castilian debtors and savers (BRAUDEL 1992, 136).

Other Italians, mainly bankers from Luca like the Bonvisi and the Arnolfini from Lyon, also constitute a significant set of the network partners. They appear mainly performing the role of financiers of the Castilian merchants.

Flemish and French are also part of the network, even though their number is residual in total number of nodes. Flemish constituted 3% of the agents and they were mainly placed in Seville. They were basically merchants who wanted to profit from the lucrative colonial trade. They were strictly connected to the wool cloth industry in Flandres and linens, reselling in Seville these manufactured products, which had an incredible demand in the Spanish Indias (CRAILSHEIM 2009). Indirectly, they would benefit from the colonial trade. A geographical reverse is observed by the buying of big quantities of olive oil and indigo or cochineal for the textile industry (CRAILSHEIM 2008, 297). That's the case of Diego de Gylles, who appears as a debtor of Gerónimo de Valladolid, paying directly to Simon Ruiz, his brother Vitores and Francisco de la Presa through a bill of exchange of 1563³⁸. Pedro de Morgen participated in 6 acts only along the year of 1561, named as banker, arranging deposits of Geronimo de Valladolid to the beneficiaries of bills of exchange, coming from Medina ³⁹. The amounts were almost all withdrawn by Genoese in Seville.

Some of these Flemish partners are also settled in the area of Medina del Campo. And they participated in this network activity as takers of Simon Ruiz, as Sebesten de Morgen⁴⁰. Would these Morgen derive from different branches of a same Flemish bank? We don't know for sure, since our data did not establish any connection between them, either financial or familiar. But it seems a strong probability.

French were even less represented in the network and their presence seems to be related to the paper trade, near the Spanish Court, as Lapeyre indicates in his study about the

³⁷ Bill of exchange ASR-01.1561.029.

³⁸ Bill of exchange ASR-01.1563.015.

³⁹ Bills of exchange ASR-01.1561.039, ASR-01.1561.042, ASR-01.1561.043, ASR-01.1561.045, ASR-01.1561.046, ASR-01.1561.048, ASR-01.1561.049.

⁴⁰ Bill of exchange ASR-01.1564.001.

Castilian customs in this period (LAPEYRE 1981, 98). Their function in the network is to intermediate transfers between Castilian fairs, as Martin Lizeul⁴¹.

Portuguese represent 4% of the total individuals interacting in this network structure. If the most part are actually in Lisbon, like António Gomes, a few elements appear exchanging and trading in Flanders (Antwerp) and even Medina del Campo. Portugal was absolutely dependent from the Castilian fairs of exchange to transfer money to Antwerp, where they were settled in great number at this time (FRADE 2006). In this network, Luis Pereira, most likely a new Christian, appears paying a bill of exchange to Fernando de Frias Ceballos⁴². On the contrary, it was through the hands of the Portuguese merchants that some African and Oriental goods reached Castilian resellers. Acting as a commissioner of Simon Ruiz, António Gomes in 1564 is looking for slaves demanded by his Castilian partner, as well as sending payments to Antwerp by his action as a taker⁴³. The establishment of a current account between them in 1563 was the beginning of a long term partnership⁴⁴. This interdependency between Iberians would be crucial in the times to come.

Germans become visible very seldom in the network. They are still in major difficulties by the payment suspensions decreed by Philip II, in 1557. This situation would be maintained by a few years, since they refused to agree with the settlement proposed by the Spanish king. He was willing to pay what he owed, but reducing the interest rate to 5 % (EHRENBERG 1955, 75). The name of Anton Fugger appears again in the performance of a direct reciprocity with Simon Ruiz. After resolving the dispute with Philip II, the German banker continues to fund the Spanish expansionist policies, but this time holding in small and medium Castilian capitalists, as Simon Ruiz. In turn, he financed shipments of Simon Ruiz for large European markets, notably Lyon⁴⁵. That role is played by Epofano Payez, one of the Fugger representatives in Medina del Campo fairs. He financed these operations with other German bankers, as Johannes and Sebastian Welser. They also displayed the function of intermediaries, in which their economic role

‘ [...] was of various kinds: in simple market-making, like the exchange dealer; in credit, as in lending long and borrowing short, which intermediates between the borrower who wants an extended period in which to repay and the lender who wants liquidity; and in

⁴¹ Bill of exchange ASR-01-1564.058.

⁴² Bill of exchange ASR-01.1563.002.

⁴³ Letter from António Gomes to Simon Ruiz on the 21st February 1564. ASR-002.1564.342.

⁴⁴ Letter from António Gomes to Simon Ruiz on the 19th July 1563. ASR-002.1563.128.

⁴⁵ Bill of exchange ASR -001.1561.027.

risk, with the intermediary standing between the risky borrower and the risk-averse lender (KINDLEBERGER 1984, 45).’

Even if the preferential contacts in the network were mostly Castilian and Genoese, a betweenness distribution of the network’s nodes in the figure 4 above evidences the differential relative weight of these individuals in the network. In blue, are the less important agents and in red, the crucial partners in it. Individuals like Andres and Francisco de Maluenda, Simon Sauli, Simon Lercaro, Battista or Agustin Spinola, even if they don’t present the biggest total number of connections are essential to foster the triangle between Simon Ruiz (Vitores and de la Presa), Geronimo de Valladolid and Lyon. Here, even if the Bonvisi present a direct connection with the Simon Ruiz, other individuals like the heritors of Buenaventura Micheli, Geronimo Arnolfini or Anton Fugger, at this moment, offered the network more stability. Their absence would result in the network crash.

Comparing the amount of the transactions involved, with the attention focused on takers and payers and the total amount they were able to transact in a single act, it is clear who were the ones with a bigger financial capacity and wealth in this network. In the following table and for uniformity reasons, the values mentioned in the sources were all converted to *maravedis* – one of the main money units of the time, which the Dyncoopnet team decided to take as the normalized unit.

Table 4 – Acts involving the ten biggest money transactions between 1560 and 1564 in Simon Ruiz network

Date	N Value (maravedis)	Taker	Payer	Donor	Beneficiary
26-01-1561	10,237,500	Nicolau de San Malido	Stefano Spineli	Simon Ruiz	Andres Ruiz Heritors of Ludovico Bonvisi and Antonio Bonvisi
02-04-1561*	7,800,000	Simon Ruiz	Heritors of Ludovico Bonvisi and António Bonvisi	Simon Ruiz	Heritors of Ludovico Bonvisi and António Bonvisi
08-10-1563	4,013,584	Nicolao Rapondi	Heritors of Buenaventura Micheli Geronimo Arnolfini	Simon Ruiz	Andre Ruiz Heritors of Ludovico Bonvisi e Antonio Bonvisi
05-05-1560	3,999,750	Nicolao Grimaldo Antonio Paravecini Lorenço Spinola	Franco Spinola	Simon Ruiz	Alessandro Bonvisi Andre Ruiz Simon Ruiz
13-01-1560	3,472,000	Giovan Antonio Pinelo	Giovan Paolo Cussani Guido Cussani	Simon Ruiz	Andre Ruiz Heritors of Ludovico Bonvisi and Antonio Bonvisi
18-01-1560		Geronimo de Curiel	Heritors of Buenaventura Micheli Geronimo Arnolfini		
29-08-1562	3,392,000	Francisco de Maluenda Andres de Maluenda	Heritors of Ludovico Bonvisi and Antonio Bonvisi	Simon Ruiz	Andre Ruiz Heritors of Ludovico Bonvisi and Antonio Bonvisi
28-11-1564	3,000,000	Fernando de Frias Ceballos	Simon Ruiz	Fernando de Frias Ceballos	Baltassar de Paredes
01-02-1564	2,544,000	Francisco de Maluenda Andres de Maluenda	Heritors of Ludovico Bonvisi and Antonio Bonvisi	Simon Ruiz	Andre Ruiz Heritors of Ludovico Bonvisi and Antonio Bonvisi
14-04-1562	2,120,000	Francisco de Maluenda Andres de Maluenda	Heritors of Ludovico Bonvisi and Antonio Bonvisi	Simon Ruiz	Andre Ruiz Heritors of Ludovico Bonvisi and Antonio Bonvisi
29-01-1564		Jeronimo Curiel de la Torre	Heritors of Buenaventura Micheli Geronimo de Arnolfini		
15-01-1560	1,736,000	Vincenzio Ambrogy	Piero Salviati Ludovico Spina	Simon Ruiz	Andre Ruiz Heritors of Ludovico Bonvisi and Antonio Bonvisi

* Two bills of exchange with the same value and the same agents

Source: Bills of exchange ASR-01.1560.002, 01.1560.018, 01.1560.012, 01.1560.007, 01.1560.024, 01.1561.030, 01.1561.010, 01.1561.015, 01.1562.013, 01.1562.028, 01.1563.010, 01.1564.003, 01.1564.006, 01.1564.059.

As it appears recurrently, in the table above, the great transactions happened in the Castilian fairs – Lyon axe, the only exceptions being the bills of exchange sent from Ceballos in Antwerp to Medina del Campo, where the payer, Simon Ruiz, would deliver the amount to Baltassar de Paredes. There was also the case of Simon Ruiz sending money to Alessandro Bonvisi in Flanders, through Genoese hands (Spínola, Grimaldo, Palavicino). The eight other examples corroborate the analysis of the network's key agents: Simon Ruiz, Francisco and Andres de Maluenda in Medina del campo, Andre Ruiz (Nantes, but Simon's representative in Lyon fairs), the Heritors of Ludovico Bonvisi and Antonio Bonvisi⁴⁶, the heritors of Buenaventura Micheli and Geronimo Arnolfini in Lyon. This was the most impressive and repetitive money vein of the network.

This second period has known an almost full renovation of the network, where some of the anchor partners had been maintained, like the Bonvisi of Lyon or Andre Ruiz. The trading activity of Simon Ruiz's company has grown as well as its vitality making his partners exponentially projected in the business world. The strategic decisions of trading colonial goods and settle a representative both in Seville and in Antwerp had permit to deeply enlarge the number of partners. The axes connecting Simon Ruiz business united bankers in Lyon for financing the business and bankers in Medina del Campo, either Castilians or Genoese, and had Seville as main epicenter of his business activity. It was important to connect the market of Antwerp with the Medina del Campo fairs for payments and Seville, point of departure of colonial dyeing products and point of arrival for the woolen and linen from Flanders and Northern France, with the North of Europe to the North and point of arrival for the woolen and linen from Flanders.

3. An unstable stability (1565-1568)

After 1565, the network dynamics evolves according to an unstable conjunctural period. But, at the same time, it reveals to be a quite stable period concerning the main characteristics of the network, as one observes in the table 5.

⁴⁶ 'Antonio Bonvisi was an important figure in an international network which covered all the chief centers of Europe. Antonio himself became head of London bank, maintaining from London close links with the Bonvisi establishments in Antwerp, Lyon, Lucca, and elsewhere. (...) From 1520s Antonio was a non-resident partner in the Bonvisi firm in Lyon, and by 1546 the Antwerp firm was entitle «Anthony Bonvisi, Ludovico Bonvisi, Nicholas Diodatys and their company of Antwerp». Such links facilitated the trade in merchandise at a time when Italian silks, the re-exports of Antwerp, and French wares figured largely in the imports of the Italian merchants (...) (BRATCHEL 1996, 11)' About the Bonvisi activities in Lyon check (BAYARD 1971).

Table 5 – Simon Ruiz network yearly growth, 1565-1568.

Year	Number of nodes	Nodes' Growth rate (%)	Number of edges	Edges' Growth rate (%)	Average degree	Growth of the average degree
1565	76	- 8.4	79	9.7	2.08	0.25
1566	85	11.8	81	2.5	1.91	- 0.17
1567	69	-18.8	70	- 13.6	2.03	0.12
1568	98	42	94	34.3	1.92	- 0.11
Average annual numbers	82	6.7	81	8.2	1.99	0.02

Source: Bills of exchange and commercial correspondence of the Archivo Simon Ruiz.

The network did not grow or decrease exponentially in any year between 1565 and 1568. The indicators' annual averages of the network shows stability projected in an annual growth of 6.7% in the number of nodes and 8.2% in the number of edges. The average connectivity per node is always around 2 links per node. Even so, the year of 1565 and 1567 were a little bit unstable. And the conjuncture was particularly difficult for the economic activity.

In 1565, the Commitment of the Nobles in the Low Countries, which heads were the prince William of Orange and the Elmont Duke, wrote a petition to the regent Margret of Parma. In that petition they ask for a mildness of the Inquisition activity in the Low Countries. Even though the regent felt the pressure, the monarch did not accept and maintained the persecution against the Protestants in the Northern territories.

In the first half of the century, the Low Countries had known a spectacular economic development, in a large range of productive sectors, such as the agriculture or the textile industry. Being a neuralgic region for the European and the overseas trade, a strong group of merchants, with a higher volume of business than in any other region, had become particularly powerful. They were part of the Philip II lenders, as they had been for his father. The Calvinist ideology fit their purposes quite well, since it sustained that everyone was equal before God. In this sense, they could claim the same status as the nobles (VA 1990, IV, 327). The aristocracy, with a heavy taxation, saw their rents being diminished. The menace of increasing the fiscal weight on trade and the religious persecutions was annoying the great Flemish merchants. In 1566, popular groups were discontent because of the famine and by the escalating of prices of food. An iconoclast revolt began in the Spanish Low Countries, churches were sacked and religious images destroyed. But this first revolt was controlled. The aristocracy, directly dependent on

Royal incomes, began to curb their actions and the anger was overcome. But Philip II's policy was more and more considered as a foreign authority and he substituted his sister in the regency by the Duke of Alba.

In 1567 he entered Brussels and to stop the Calvinist revolt he forms a Blood Council, an anti heretical court, presided by 7 Spaniards, which condemned until 1573 more than 12000 individuals (VA 1990, IV, 348). He also raised the taxation. In 1568, the Prince of Orange initiated a military offensive. It was the formal beginning of the Eighty Years war between Spain and the Netherlands. This fact reconfigured the economic and financial world of the following years and the following century, and had affected substantially Simon Ruiz business network.

Flanders was vital to the Spanish economy and to Castilian merchants as Simon Ruiz. Links between Seville and Antwerp were determinant for the success of the Netherland's economy. Spanish wool and colonial products were reexported through Antwerp and the manufactured products from the Netherlands like metal products, drapes, arms, Baltic cereals and wood to the naval construction found their substantial demand not only in the Iberian space but also in colonial markets. As van der Wee stated, 'Exportation to Seville dominated everything (VAN DER WEE 1963, II, 223).'

On the other hand, in 1567 a second war of religion started in France and Lyon was again one of the central stages of the event. In Lyon, persecutions and robbing to the richest Protestants became usual. The city Council forced them to sign a public loan to the city and sold their commodities benefiting the city. Many of the great merchants of Lyon were forced to migrate to escape the persecutions and protect their assets, which favored the Genoese economy, namely regarding the silk and printing industry (GASCON 1971, II, 522). From November 1567 onwards the fairs of Lyon were suspended and the fairs were relocated to Besançon and Chambéry and stayed in control of the Genoese and other Italians, like the Tuscans (the Strozzi) and the Luccese (the Bonvisi) (GASCON 1971, II, 646).

In Castilian fairs the delays were each year larger. In the beginnings of 1566, the May payments of the previous year did not even start and in April 1567 the fairs of Villalon and Medina de Riosecco were abolished (RUIZ MARTIN 1986, II, 274). In this same year, a successive wave of bankruptcies occurred in Seville, after the appraisal of the silver fleet by the king. In consequence, Burgos' companies went down, combined with the actions in Flanders. In 1568, António Gomes informed Simon Ruiz about the problems provoked in Lisbon by the payments' delay in Castile: '... hes esta terra tan estrecha y tan triste que se tenemos debito dos ferias hes

necessario que tengamos otros dos creditos⁴⁷.’ In May he assumes the great lack of liquidity of the more powerful merchants he had known until then⁴⁸.

Fig. 5 – Simon Ruiz network, 1565-1568

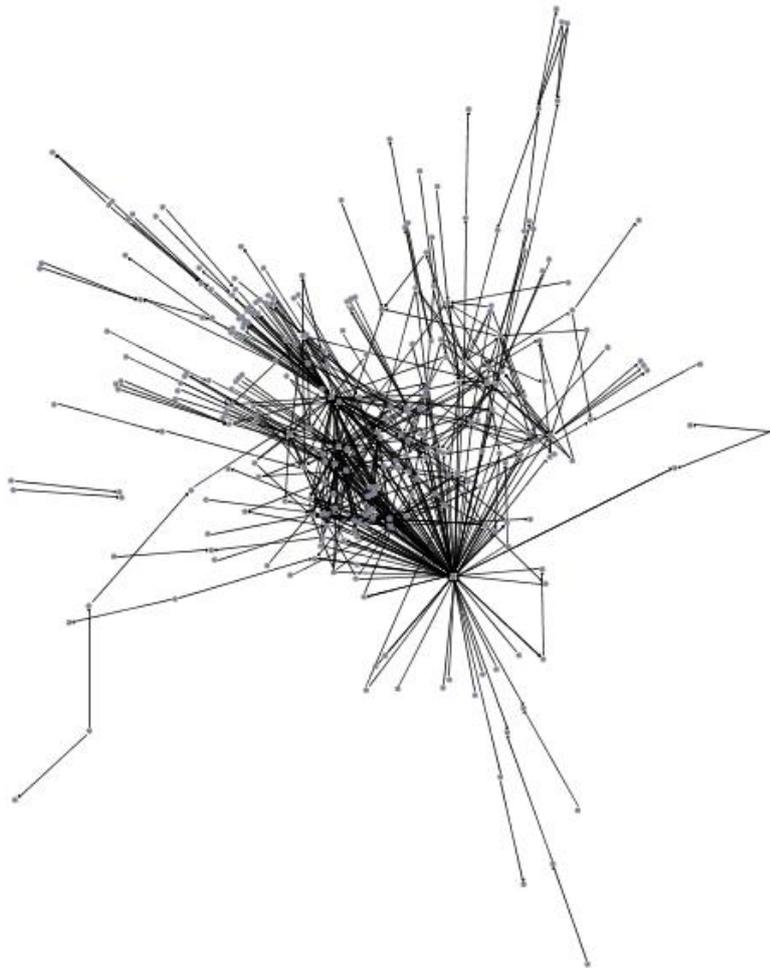
Nr of nodes: 271 % of the total nodes: 5,3%

Nr of links: 337

Average degree – 2.49

Percentage of new partners – 81.9% (222)

Percentage of old partners – 18.1% (49)



⁴⁷ Letter from António Gomes to Simon Ruiz on the 10th February 1568. ASR-008.1568.084

⁴⁸ Letter from António Gomes to Simon Ruiz on the 16th May 1568. ASR-008.1568.087.

Even so, the network was resilient, despite the disorders that were going around. It is based in well known partners. Eighteen per cent of them were also partners in the previous period of analysis, even if the large majority of the network members are new. Topologically it is based in four main stars and its anchor points are former partners: Simon Ruiz (Medina del Campo), Heritors of Ludovico Bonvisi and Antonio Bonvisi (Lyon), Fernando de Frias Ceballos (Antwerp) and Agustin Spinola (Medina del Campo/ Madrid). Together they reunite a total number of 117 links⁴⁹, which represent more than one third of the links (34,7%).

The activity of Simon Ruiz in the network was beginning to change. Participating in bills of exchange, he mostly appear as taker of Genoese and Castilian agents in Spain to send money to the Lyon fairs, or as a payer of the agents in Portugal who wanted to send their money to the main circuit of Castilian fairs or Seville to Lyon. He still appears, together with Vitores (or his heritors) and de la Presa as taker and payer of money to Seville, even if this period corresponds to the end of the business partnership in the Andalusia city. After 1565, the link with Seville loses importance, now with Francisco de Mariaca as a representative of the association with Vitores Ruiz and de la Presa. The Portuguese Antonio Gomes, in his correspondence with Simon Ruiz, referred several times how much he feared "*o tormento de Sevilha*"⁵⁰. The years of 1564 and 1565 are of low turnout of precious metal and colonial goods in the city, a reality which remains in 1567 with pronounced losses in 1568, giving way to pessimism and reluctance of shipping to the New World. The failures that followed are a persistent indication of how things were wrong in Castile (CHAUNU 1960, VIII 2,1, 487). António Gomes wrote how the times were tempestuous⁵¹ and how the narrowness of credit led to a generalized distrust⁵².

Simon Ruiz also appears as a trustful collaborator of the Bonvisi. With a significant current account with each other, Simon became a privileged partner to act as a payer of the Bonvisi transactions to Castille⁵³ or in the transactions with Seville, along with his associates⁵⁴.

Agustin Spinola, son of Ambrogio Spinola, was one of the great Genoese bankers in Spain, based in Medina del Campo and Madrid. Agustin Spinola acts as borrower in payments to reach the fairs of Lyon and Besançon branch of the Spinola family in Genoa⁵⁵, or other Genoese companies as Grimaldo, Fiesco, Pinelo or Lercaro. The strategy of the Spínola in

⁴⁹ This measure is gathered by the sum of the total degree of the agents. Simon Ruiz is connected to 44 nodes, the heritors of Ludovico Bonvisi and Antonio Bonvisi to 50 (it is the larger total degree of the graph), Fernando de Frias Ceballos is linked to 13 nodes and Agustin Spinola to 10.

⁵⁰ Letter from Antonio gomes to Simon Ruiz on the 29th September 1567. ASR-006.1567.099.

⁵¹ Letter from Antonio Gomes to Simon Ruiz on the 17th June 1567. ASR-006.1567.096.

⁵² Letter from Antonio Gomes to Simon Ruiz on 1st July 1567. ASR-006.1567.097.

⁵³ For instance, the bill of exchange ASR-01.1567.023.

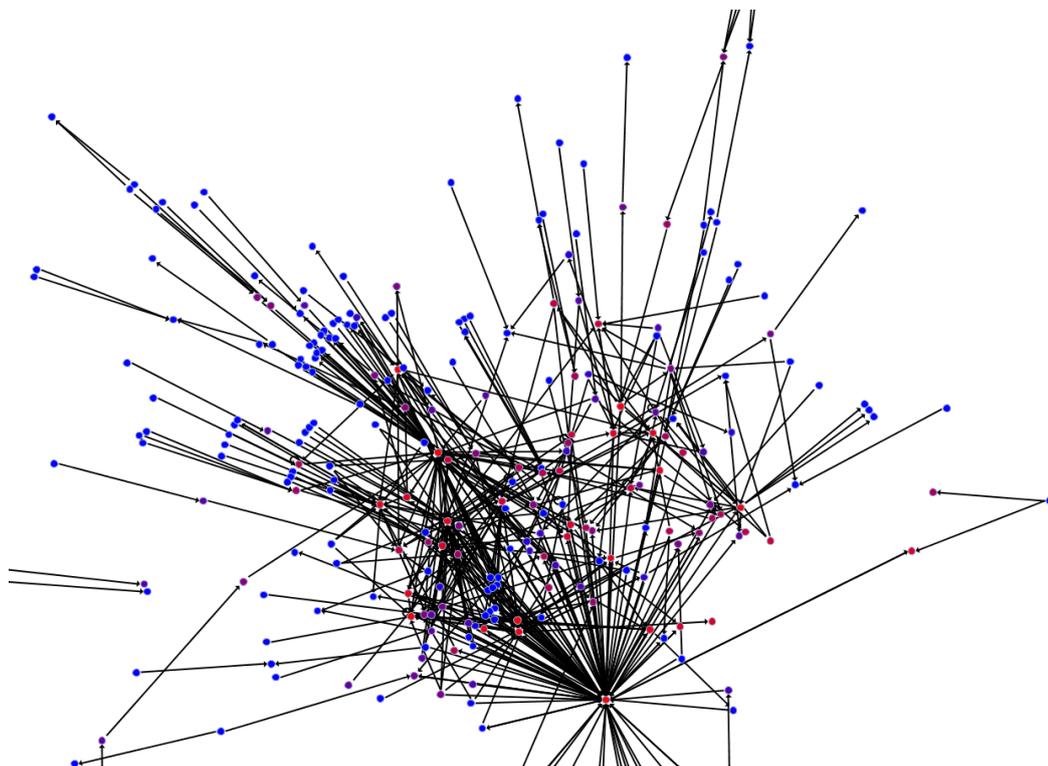
⁵⁴ Bill of exchange ASR-01.1565.055, for example.

⁵⁵ Bill of exchange ASR-001.1567.013.

this beginning of the Early Modern period was sedimented in this network mechanism ' (...) per realizzare acantonamenti di denaro per la corona spagnola (asientos e factorias) e per gestire due galee della squadra spagnola di Genova.(ALVAREZ NOGAL 2007, 97)'

But besides these stars, the network topology in the figure 5 also provides the picture of an entangled cloud, where a set of individuals are connected between them forming either clear triangles or trapezes, showing a higher cluster coefficient and tracing money circuits. In this denser part of the network are connected individuals with relative significant total degree: it is the case of António Gomes (in Lisbon), Vitores Ruiz and his heritors after 1566 (in Medina), or Francisco de Mariaca (in Seville). Sometimes the vertices of these polygons are the centers of the star-shaped subgraphs, like the Bonvisi, and these apparently minor figures are the ones connecting major agents.

Fig. 6 – Simon Ruiz’s network betweenness distribution, 1565-1568



As one observes in the figure above, the functioning of the financial system is accomplished through some people who connect these great central subgraphs. Connecting the Bonvisi star and the Simon Ruiz's are agents placed in Lisbon, Medina del Campo or Antwerp – António Gomes, Fernando de Morales, Diego de la Torre, Luis Gomes, Andre Ruiz, Francisco de Mariaca, or Francisco de la Presa. Francisco de la Presa dominated contacts with Spaniard merchants, who after the bankruptcy of 1557 were invited to participate in the financial life of the

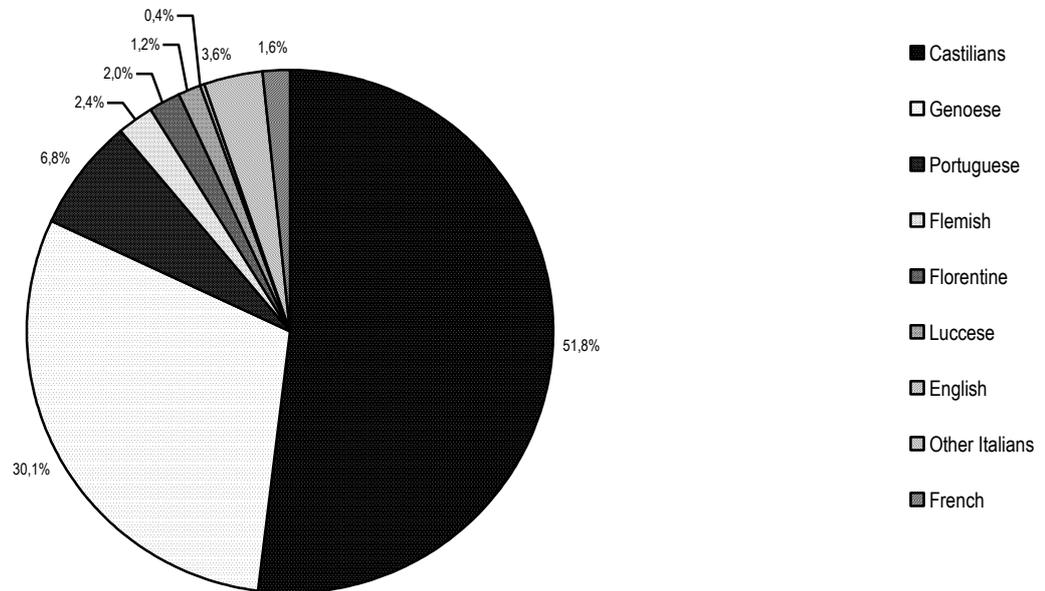
kingdom. Through their collaboration, these merchants took advantage of the circuit Ruiz - Bonvisi to reach the large European trading houses in places like Lyon and Antwerp. Giovan de Ugalde was an important piece in this puzzle since he was the extension of Simon Ruiz in the Northern region of Biscaya, from where the trade to Antwerp departed. The Bonvisi sent money to him, for him to send to Antwerp where it was needed. In this case, the circuit of money was something like Simon Ruiz – Bonvisi – Giovan de Ugalde – Fernando de Frias Ceballos.

The other network axe towards Lyon, by Agustin Spínola and other Genoese bankers in Medina del Campo and Seville was dependent from the actions of Genoese like Stefano Lercaro (Medina), Juan Battista Spínola (Lyon), Nicolo Grimaldo (Medina) or Lazaro Doria (Medina). They acted as commissioners in the transfers from Simon Ruiz and other Castilians to Lyon, with the exception of the Bonvisi bankers, but to the heritors of Buenaventura Micheli and Geronimo de Arnolfini. But there were two Castilians performing the same role: Diego de Castro and Geronimo de Salamanca. The first controlled the connections with Lyon and from Lyon to Antwerp⁵⁶. Gerónimo de Salamanca appears during the year of 1566 connecting Simon Ruiz to other Genoese houses in Madrid and in Lyon as their debtor. And houses like the Lercaro and the Sauli are intermediating and conducting Simon Ruiz money to the beneficiaries Bonvisi⁵⁷.

⁵⁶ Bills of exchange ASR-01.1564.040 and ASR-01.1566.046.

⁵⁷ *Vide f.e.*, ASR-01.1566.009.

Chart 4 - Nationalities of Simon Ruiz network partners, 1565-1568



The percentage of unknown individual nationalities for this period is 8.1% (22 cases).

The percentage of known individual nationalities for this period is 91.9% (249 cases).

Source: Bills of exchange and commercial correspondence of the Archivo Simon Ruiz.

The graph considering the nationalities of Simon Ruiz network partners indicates small changes in the partner choice criteria. A strategy of continuity is linked to the fostered alliance with other Castilian merchants and bankers, and with the Genoese who by this time were getting stronger due to the dependency in which the Spanish king was trapped. With an increased taxation the Castilian products trade was difficult to the Castilian merchants and the Genoese took advantage of it. Besides the 1562 tax «de los millones» which taxed the daily consumption goods, such as meat, wine, olive oil, vinegar or salt, other taxes exclusively upon trade made the activity more unattractive. The most exported Castilian commodity – wool- was taxed in its exports to Flanderts, France and Italy. In 1566, new taxes upon the salt trade were created, the *arancel* on the exported wool was doubled, as well as the application of the *almojarifazgo* on the Indias commodities (VIGO GUTIERREZ 1997, 12). In the 1560s, the Genoese forcedly financed the king in Seville, but took some advantages,

‘(...) parce que beaucoup de ces italiens font souche en Castille, épouse de jeunes castillanes et, dès la deuxième ou en tout cas troisième génération, abandonnent merchandise et finance, accèdent aux orders privilégiés, font la chasse aux honneurs, colonisent l’Ayuntamiento ou le chapitre de la Eglise Majeure (BENASSAR 1970, 52).’

After 1561 they were the great beneficiaries of the new *juros de resguardo* payment, in the *asientos*, in which they could speculate even more. The monarch payed initially the total amount of interest agreed in the loan. In exchange they would put all the money in the place the monarch needed and demanded the condition of having immediate «licencias de saca», which meant send silver outside Spain, mostly to Italy. To do so, the Genoese asientistas use the contacts of the Castilian merchants who had active assets in the Netherlands, Italy, Germany, France, England (RUIZ MARTIN 1968, 123,126).

The Portuguese agents were, in this period, the third more important national group in the network. This corresponds to one new diversification of Simon Ruiz trading activity. He was then investing in the Portuguese oriental commodities, such as pepper, clove or cinnamon, in connection with some agents in Lisbon, who managed to buy it from the contractors, or they were part of the contracting parts of these goods⁵⁸. He was also investing in buying Brittany wheat production and reselling it in Portugal⁵⁹, which was always in demanding for the product, due to a weak autonomous production and a spread overseas Empire, which needed grain supplying. Six of the Portuguese involved in the network at this period are settled in Seville, participating in the high finance with the asientistas and the Castilian bankers in Medina del Campo. That was the case of Gaspar and Gonçalo Jorge, who in 1565 and 1566 were takers in bills of exchange in which the payers were Simon Ruiz, Vitores Ruiz and Francisco de la Presa, and whose donors were Conrado Grimaldo, Galeaco de Negro or Esteban Doria⁶⁰. One cannot forget that the Genoese in Spain were mostly distributed by the Court and in Seville, where the headquarters of their banking system were settled. For this period, 8% of the Genoese were still based in Seville. In 1567, two Portuguese agents were established in Nantes. From there, they set up relations between Lisbon merchants, Seville and the French port. It was the case of Tomas Henriques and Francisco Carneiro. They were involved in the wheat buying either for Seville, from where the Portuguese Moroccan places were provided, or for Lisbon⁶¹. Intermediating businesses in

⁵⁸ Vide f.e., letter ASR-003.1565.274.

⁵⁹ Vide letter from António Gomes to Simon Ruiz on the 29th September 1567. ASR-006.1567.099.

⁶⁰ Bills of exchange ASR-01.1565.061 or ASR-01.1565.072.

⁶¹ Letter on the 14th February 1567. ASR-006.1567.102. Letter on the 6th July 1568. ASR-008.1568.089.

Antwerp there was only one Portuguese: Pero Garcia. He was present in the network only in 1566, paying a bill of exchange to Fernando de Frias Ceballos and with a current account with a Flemish in Castile, Jhoam Oming⁶².

In this period agents based in Antwerp had diminished about 33%, which does not surprise, considering what was happening in the city at that time. One main change has occurred. Most of the Castilian merchants with whom the network agents were linked almost disappeared. The exceptions are Fernando de Frias Ceballos and Francisco de Ruesca. Alexandre Bonvisi and Lazaro Spinola stayed there on behalf of the Genoese nation.

In order to understand the overall picture one must even consider that the Atlantic Northern routes were, then, a risky business. The uprising of the Netherlands has also relied on the support of the French Protestants, who took La Rochelle in this period, and the English. These nations attacked under privateering and piracy the vessels from the South, namely the Spanish ones. One of the best known episodes was the Elizabeth's confiscation of a fleet which sailed from Spain to Antwerp with money for the Duke of Alba in December 1568. The Spanish embargo to the English wool in 1563 had relocated the English market to the Northern German cities as Hamburg and the correspondent English embargo to the Spanish products was extended to the Portuguese in 1569. As Van der Wee described, 'For several months trade in Antwerp was completely dead. Furthermore traffic overland to France was particularly unsafe in 1568 and 1569. The Dutch Baltic navigation, which had expanded enormously in the previous years, got into severe trouble because of the action of the English ...' and the Swedish-Danish war, which menaced to close the Sound for good (VAN DER WEE 1963, 237).

During this period one important node became part of the network structure: the king of Portugal. In 1568, the Portuguese Crown was in deep difficulties. António Gomes wrote to Simon Ruiz saying he had just borrowed money from English and Flemish merchants. He had also devaluated Portuguese coin in 70 per cent, which caused depreciation of merchandise and grain. According to the Portuguese merchant, in 10 years Portugal would enter in default⁶³. Portuguese merchants had suffered particularly with the blockage of Antwerp's trade.

In short, one can testify that Simon Ruiz network maintains certain stability in the years between 1565 and 1568. Even if the period is lined by troubled times, which affected not only trade but also financial markets in terms of abundance or narrowness of capital, the network stabilizes. In the period, it was not noticeable large expansion or contraction in its size and average degree. The choice of the partners seems to be oriented by the same criteria than in the

⁶² Bill of exchange ASR-01.1566.051.

⁶³ Letter from Antonio Gomes to Simon Ruiz on the 16th May 1568. ASR-008.1568.087.

previous years: Castilian merchants, with solid financial health; Genoese agents related with the *asientos* policy and the European banking system. The new orientation in the company activity was, in fact, the Portuguese overseas expansion products, namely the ones for the East, as spices, but also the wheat, a riskier commodity, dependent from natural conditions, which reflected an increase of Portuguese agents in the network. This new direction in the business helped Simon to face the difficulties in the Antwerp market. But the years to come were announcing even harder economic conditions.

4. Difficult years (1569-1573)

Table 6 – Simon Ruiz network yearly growth, 1569-1573.

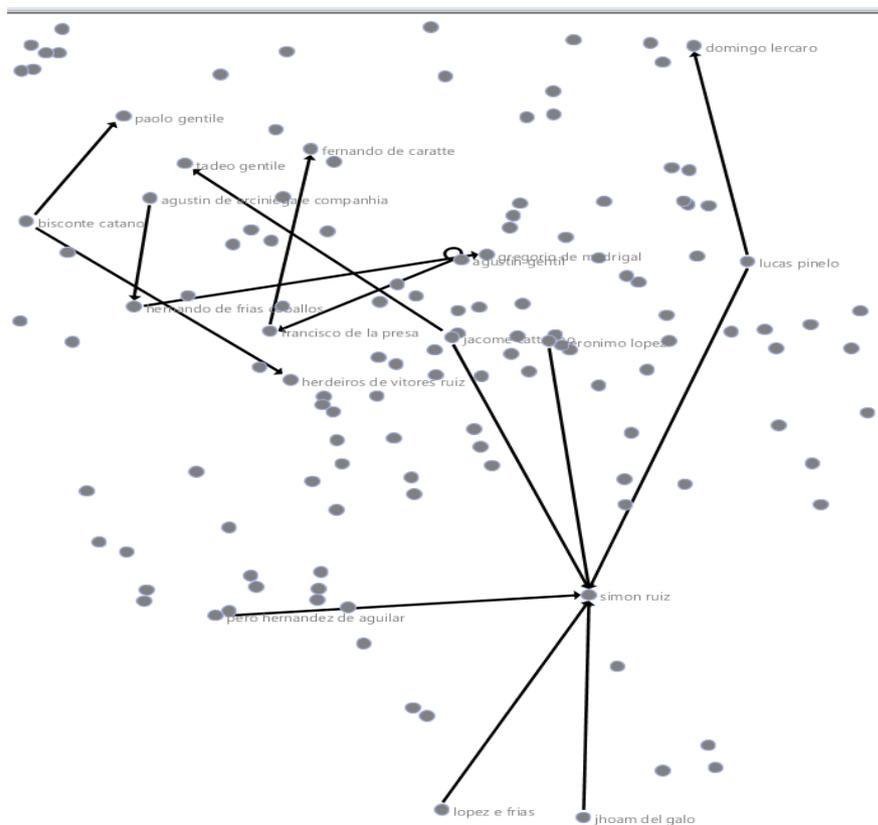
Year	Number of nodes	Nodes' Growth rate (%)	Number of edges	Edges' Growth rate (%)	Average degree	Growth of the average degree
1569	18	-81.6	13	-86.2	1.44	-0.48
1570	49	172.2	46	253.8	1.88	0.44
1571	44	-10.2	42	-8.7	1.91	0.03
1572	30	-31.8	22	-47.6	1.53	-0.38
1573	74	146.7	72	227.3	1.95	0.42

Source: Bills of exchange and commercial correspondence of the Archivo Simon Ruiz.

The year of 1569 was disastrous for the network. Links and nodes were restricted to a minimum of 13 links in 18 nodes, even if the average connectivity was in 1.44. The total number of acts in this year is only eleven bills of exchange. The majority (6) were connecting Seville – Medina del Campo, three Lyon-Medina del Campo and two others linking Antwerp-Medina del Campo. Castilian fairs activity had stopped, as almost all the commercial and financial centers of Europe. The average of transacted values is 358920 *maravedis*, which is a very low amount of money, compared with other values in previous periods. The larger sums are transferred from Seville to Medina, transfers between Genoese bankers, namely Lucas Pinelo and Domingo Lercaro. The higher value transferred was 921542 *maravedis*. 'Los extranjeros dejaron de enviar a Castilla fondos que, por una serie de retrasos continuados, estaban allí inmovilizados durante un tiempo que no se podia ni calcular (RUIZ MARTIN 1986, II, 278).⁶⁴

⁶⁴ According to the same author, since 1567 the Genoese Republic had decided to prohibit the exchanges to Spain and Lyon decided the same way in 1571 (RUIZ MARTIN 1986, II, 278).

Fig. 7 - Simon Ruiz network in 1569



The few partners remaining active in this year were almost all old partners and almost all Castilians or Genoese. People who would have some liquidity to invest and to circulate.

The following years continued to be troubled. The war spread all over Europe. Even so the King Philip II arranged time and wealth to sustain another war. In May 1571, he established an alliance with Venice and the Holy Church against the Turkish advance in the Mediterranean. In October that year, the Saint League encountered the Turks in the Lepanto Gulf and won. The danger of the Peninsula invasion by the Turks and the pirates of Northern Africa in response to the revolt of the Granada Moors was a real danger. After this Turkish defeat, the Berber piracy continued to attack the Spanish maritime coast. But as the sultan was focused in the Persian wars and Philip II in the Netherlands the truces in the Mediterranean were consolidated (VA 1990, 344).

Even if in 1570 and 1571 there was a recovery, the network size retreated to the early 1560s level. The activity was only retaken between Lyon and Medina del Campo, even if these last payments were mainly out of the fairs. In August 1570, the peace of St. Germain suggested a reconciliation time in France and the reactivity of Lyon's credit and payment market (ELLIOT 2000, 136). Even so, the Portuguese António Gomes wrote to Simon Ruiz about the revolts in

France and Flanders, saying 'no se puede enviar ahla coza que sea de importancia⁶⁵.' The contracts involving agents in Antwerp are scarce in these two years – only three bills of exchange from Antwerp reached the headquarters of the company. There were no takers to send money to Flanders and vice-versa⁶⁶.

Antwerp was a market standing. The Duke of Alba's government was tyrannical and displeased to the rebels and to the loyal subjects of the Catholic Monarchy⁶⁷. The year of 1572 watched the taken of the cities of Brill and Flushing in the Netherlands (and in fact, the provinces of Holland and Zeeland) by the Sea Beggars. It resulted in a complete blockage in the Scheldt to the maritime trade to Antwerp. The corsairs' attacks were constant in the Northern Sea and were perpetrated not only by the Dutch rebels but also by the hostile English. The fishing and salting activities in Flanders had stopped, the production of linens had dropped as well as trading rents (VAN DER WEE 1963, II, 251-252). The money value was devaluating about 70 per cent in this period, '(...) entretenue tant par l'arrêt des arrives d'espèces que par les continuelles ponctions d'argent comptant faites à Bourse pour les besoins de la guerre (VASQUEZ PRADA s.d., 125).' In 1573, in a letter one can read the advice that in Flanders one should have only few debts to arouse some interest to invest, because the business 'no andam de feição.⁶⁸

This situation only serenaded with the beginning of another war of religion in France, after the St. Bartholomew Massacre of the French Huguenots in August the same year, in Paris. Protestants were rebelling again and controlled La Rochelle, city which experienced a seven month siege after December. It was the restart of conflicts which affected not only financing activities in Lyon, but also trade with the French Atlantic coast.

To sum up: these were destructive circumstances for the economic activity of Simon Ruiz network, moreover because Castilian fairs were also frozen. This is the time when the bills of exchange began to be taken to Madrid, directly out of the fairs. Between 1570 and 1573, 9 bills of exchange were sent from Madrid. The disorders in traditional fairs were discouraging the Genoese and Castilian bankers to participate. In 1573-74 were occurring the payments of 1570 and 1571 (RUIZ MARTIN 1986, II, 278). One should not be surprised that the period between 1568 and 1577 was the period of the great number of private companies' defaults (ABED AL-HUSSEIN 1986, II, 237). In 1572 and 1573 the complaints about the disorders of the European fairs were a constant in the correspondence with Simon Ruiz's company. Once again, Antonio

⁶⁵ Letter from António Gomes to Simon Ruiz on the 1st August 1570. ASR-012.1570.238.

⁶⁶ Letters from Lisbon to Simon Ruiz on the 16th April 1571 and on the 7th January 1572. ASR-015.1571.027 and ASR-017.1572.258.

⁶⁷ 'Alba's measures of repression, the scandalous conduct of royal officials and the Spanish soldiers, and finally the demand for the tenth penny, had all helped to complete the disenchantment with the royal government. The régime was hated as both Spanish and oppressive, and the Church, which was closely identified with it, was still further discredited. (ELLIOT 2000, 142)'

⁶⁸ Letter from António Gomes to Simon Ruiz on the 22nd September 1573. ASR-020.1573.222.

Gomes explained that due to the fairs misrule, a lot of business man misjudged their investments and their companies were in serious troubles. According to him, in trade, even if the products still have a competitive price, the traders would lose a lot of money in a few days⁶⁹. The fairs were so sparse that handled money only entered in the commercial firms one year after issued⁷⁰.

Still, the retraction in the network only achieved its end in 1573, where payments in Spain took place again. The payments to and from Antwerp were resettled – 9 bills of exchange were sent to and came from it. The situation was cooler with the policy of the new governor of the Spanish Low Countries, Don Luis de Requesenda. The maritime trade with the North recovered. Since May 1st 1573 (still under the ruling of Alva), the treaty of Nijmegen foresaw the reestablishment of trade between the Netherlands and England. Even if the major part of the English wool would go to Hamburg and Emden, it revitalized the textile industry again. On the other hand, since 1573, Holland and Zeeland permitted their subjects and foreign merchants to trade with the Low Countries after the payment of a tax, relieving the blockage in the Scheldt by granting such licenses (VAN DER WEE 1963, II, 253). Even not agreeing, Requesenda was forced to accept.

The situation in Lyon was, on the contrary, tense. The year of 1573 destroyed the fair's regularity and merchants tried to trade in the rival fairs of Genebra or Chambéry. 'La hausse des ècus en découlait en partie. La guerre contribuait aussi à accroître les taxes sur les marchandises et les emprunts public qui détournaient l'argent du commerce. (GASCON 1971, 669)' The war also brought monetary disorder and high levels of speculation. Lyon's market was not attractive at the time. In this year, only 21 acts involving Ruiz were taken from and to Lyon.

⁶⁹ Letter from Antonio Gomes to Simon Ruiz on the 29th December 1573. ASR-020.1573.215.

⁷⁰ Letter from Antonio Gomes to Simon Ruiz on the 28th January 1573. ASR-020.1573.219.

Fig. 8 - Simon Ruiz's network betweenness distribution, 1569-1573

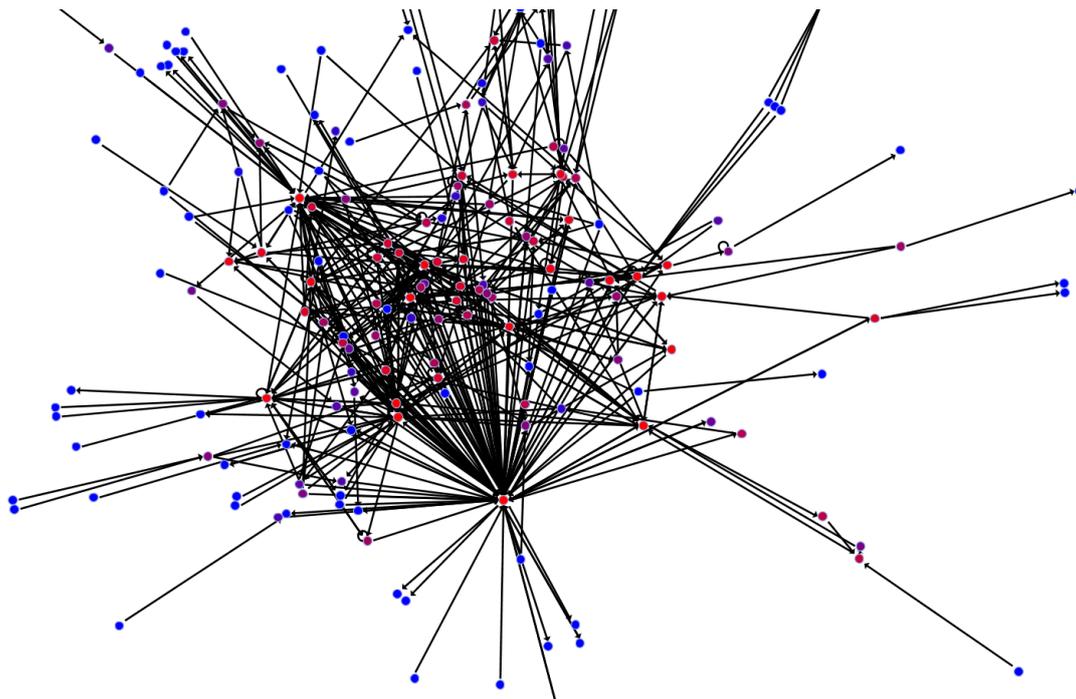
Nr of nodes: 185 % of the total nodes: 3,6%

Nr of links: 198

Average degree – 2.14

Percentage of new partners – 74.6% (138)

Percentage of old partners – 25.4% (47)



The structure of the network was still based in a three quarter basis of new agents, but the percentage of old partners was higher than before. Related with some of these partners one can observe a renewal of their commercial houses. The death of Vitores Ruiz corresponded to a continuous partnership with his sons Pero or Julian, even if they had not a specific partnership with their uncle Simon and Francisco de la Presa. They appeared acting by themselves. Other example is the substitution of the names in the Bonvisi house of Lyon. The name of the heritors of Ludovico and Antonio Bonvisi was replaced by the partnership of Bennedeto and Bernardino Bonvisi. These cases seem paradigmatic in the sense that a successful business partnership could be extended to the heritors of the first commercial partners.

These old partners had a crucial importance in sustaining the network structure. According to its betweenness distribution (fig. 8), the most important ties were old partners:

António Gomes, Hernando de Morales, Luis Gomes, Francisco de Maluenda, Agustin Spinola, Lazaro Doria, Nicolau Grimaldo, Fernando de Frias Ceballos, among others.

Partner choice criteria continued to be the same. A preference for trading with other Castilian merchants (43%), like the Maluendas, the Salamancas or Juan Castro Gallo, was maintained. The Genoese continued to be the second larger national group of partners, dividing their presence between the Spanish Court and Lyon fairs, even though, due to the religious disorders in France, some of them operated in Poligny or Chambéry. Seville occupied a more fragile link in the network with only 14 agents there. There remained only four Genoese partners, fact which clearly shows how Simon Ruiz's interests in Seville's colonial trade were vanishing. This condition was also related with the problem in Antwerp's market, which was, until then, the main distribution center of the New World goods. Even so, Simon Ruiz continued to trade indigo transacted in Seville, but, besides financing and exchanging money from Seville to Medina or Madrid and vice versa, he only had this trading position there.

The third most representative group remained being the Portuguese, even if in a number less representative than before. The partnerships with Portuguese were mainly related with the spice trade and, in this particular period, with wheat imported from France through Rouen. Other partners like Germans, Flemish, Milanese and Florentines had a reduced weight in the network, around 1% each. Nonetheless some important personalities intervened in this period. That was the case of Thomas Muller, the representative of the Fugger in Spain, who transacted money from Seville to the Court, using the services of Ruiz and his representative in Seville, Francisco de Mariaca⁷¹. Gaspar Rovelasco in Antwerp was a dealer of Portuguese pepper, and he would be negotiating its monopoly contract with the Portuguese sovereign latter on⁷².

From 1569 until 1573, Simon Ruiz network had some troubles in its supporting basis. Nevertheless, it held depending mostly on the repeated interactions with old partners, even they were still a quarter of the total number of nodes. The retraction in the network structure, in the number of nodes and edges, did not mean an equivalent reduction in the average connectivity, which stood around 2 links per node. This feature indicates a higher cohesion within the network. Even if the relations between Spain and Antwerp were crucial for the Castilian economy, it seems that the troubles in Lyon were more relevant for the network fluctuations. At this time, the network depended mostly on agents in Lyon who financed the activities in Spain and needed the Spanish and Genoese in Spain to assure the *asientos*' profits in Italy.

⁷¹ Bill of exchange ASR-01.1573.007.

⁷² Bill of exchange ASR-01.1570.036.

5. The crisis opportunity (1574-1580)

The time period in analysis was noticeable for a period of great economic, political, military or financial instability. Even so, Simon Ruiz's network has grown like never before, at an average rhythm of 36.6% per year. The year of 1574 was particularly calm in what concerns disruptive events, excepting the rebellion against the French king. But trade and financial places like Medina del Campo, Antwerp or Lyon were with «*largueza*» of capital. This abundance was particularly beneficial for the credit market, and everyone wanted to remit bills of exchange to the fairs in order to kill their debts⁷³. This situation initiated an enormous financial activity, in which Simon Ruiz began to feel deeply engaged in. On the other hand, the whole period was particularly risky, mainly in trading activities. Dangers in international maritime transportation in the European and Imperial spaces were a reality. In this sense, dividing risk by several partners was a strategy to follow by different companies.

Table 7 – Simon Ruiz network yearly growth, 1574-1580.

Year	Number of nodes	Nodes' Growth rate (%)	Number of edges	Edges' Growth rate (%)	Average degree	Growth of the average degree
1574	151	104.1	164	127.8	2.17	0.22
1575	221	46.4	260	58.5	2.35	0.18
1576	175	-20.8	215	-17.3	2.46	0.11
1577	122	-30.3	120	-44.2	1.98	-0.48
1578	230	88.5	245	104.2	2.13	0.15
1579	295	28.3	324	32.2	2.22	0.09
1580	412	39.7	496	53.1	2.4	0.18
Average annual numbers	229.4	36.6	260.6	44.9	2.24	0.06

Source: Bills of exchange and commercial correspondence of the Archivo Simon Ruiz.

The year of 1575 witnessed a smaller growth, because the previous trimester was disturbing for business. The public financial efforts of the Spanish Crown in the Mediterranean and the Netherland's wars had forced the king to demand loans and more loans, especially to the Genoese bankers, who offered the king high rates of interest. The debts in 1575 achieved 36 million ducats and the Spanish budget 6 million (ELLIOT 2000, 179-180). On the 1st September

⁷³ Letter from Antonio Gomes to Simon Ruiz in 3rd December 1574. ASR-023.1574.305.

1575, Philip II suspended all the payments of interest and declared the last fifteen years *asientos* illegal⁷⁴.

The Genoese were the main ones hit with the bankruptcy (RUIZ MARTIN 1990, 17; EHRENBURG 1955, 307)⁷⁵, but the impact on the European economy was more inclusive. In Antwerp, the credit market was devastated. The capital narrowness meant that there was no money in specie, in bank deposits or in bills of exchange. Most part of the bankers were broken and bills were returned from Spain as protested and the Spanish government '[...] was compelled to declare a general moratorium of 6 weeks.(VAN DER WEE 1963, 263).' In Seville, the major banks defaulted like the Espinosa or the Morgen. These bankruptcies hit trade with America, the main pillar of the Spanish economy. There was no money or credit to invest in the Indies fleet. The market was blocked. In the firm's correspondence, one can read that the banks of Seville were defaulting⁷⁶. In Lyon, even if the trading activity was declining, financing was hanging on, mainly by the Italian's activities. The Tuscans were still ranging to do business around Lyon. The Genoese focused their trading in Besançon and Châmbéry. Even so, the defaults in Lyon reached their peak in 1576 and 1577 (GASCON 1971, 600).

This situation was an opportunity to Simon Ruiz to participate in the public credit business. According to Henry Lapeyre, since 1571 he had this intention and wrote to the Bonvisi of Lyon looking for financing support. This seems to be the great motive for the enlargement of the network in this period (LAPEYRE 1953, 21).

Due to this context, when it was 'the time in which no one trusted no one'⁷⁷, the activity of Simon Ruiz network decreased, in 1576 and 1577, in the number of agents involved in the network, and in the number of connections established, as the diminution in the average degree evidences. The following years signal a recovery in the growth tendency.

At this time, silver was flowing to Seville in unparallel quantities. J. H. Elliot points out that eight million ducats of silver were reaching Seville from 1576 to 1580, and this fact contributed to the revival of confidence in the network. Financing was more appealing than trading at this time. Simon Ruiz's correspondents in Portugal signaled the struggle of trading with France or Flanders, either because of corsairs, or because of the French and Netherlands' wars⁷⁸.

⁷⁴ For further financial details of the bankrupt decree check (LOVETT 1980).

⁷⁵ 'Os negocios dos genoveses interessados andam mal' in letter from António Gomes to Simon Ruiz in 14th May 1576. ASR-034.1576.015.

⁷⁶ Letter from Antonio Gomes to Simon Ruiz on the 2nd April 1576. ASR-034.1576.031.

⁷⁷ These are the words of Hernando de Morales to Simon Ruiz in 11th November 1575. ASR-028.1575.076.

⁷⁸ Letters ASR-028.1575.015, ASR-028.1575.029, ASR-028.1575.034.

Fig. 9 – Simon Ruiz network, 1574-1580

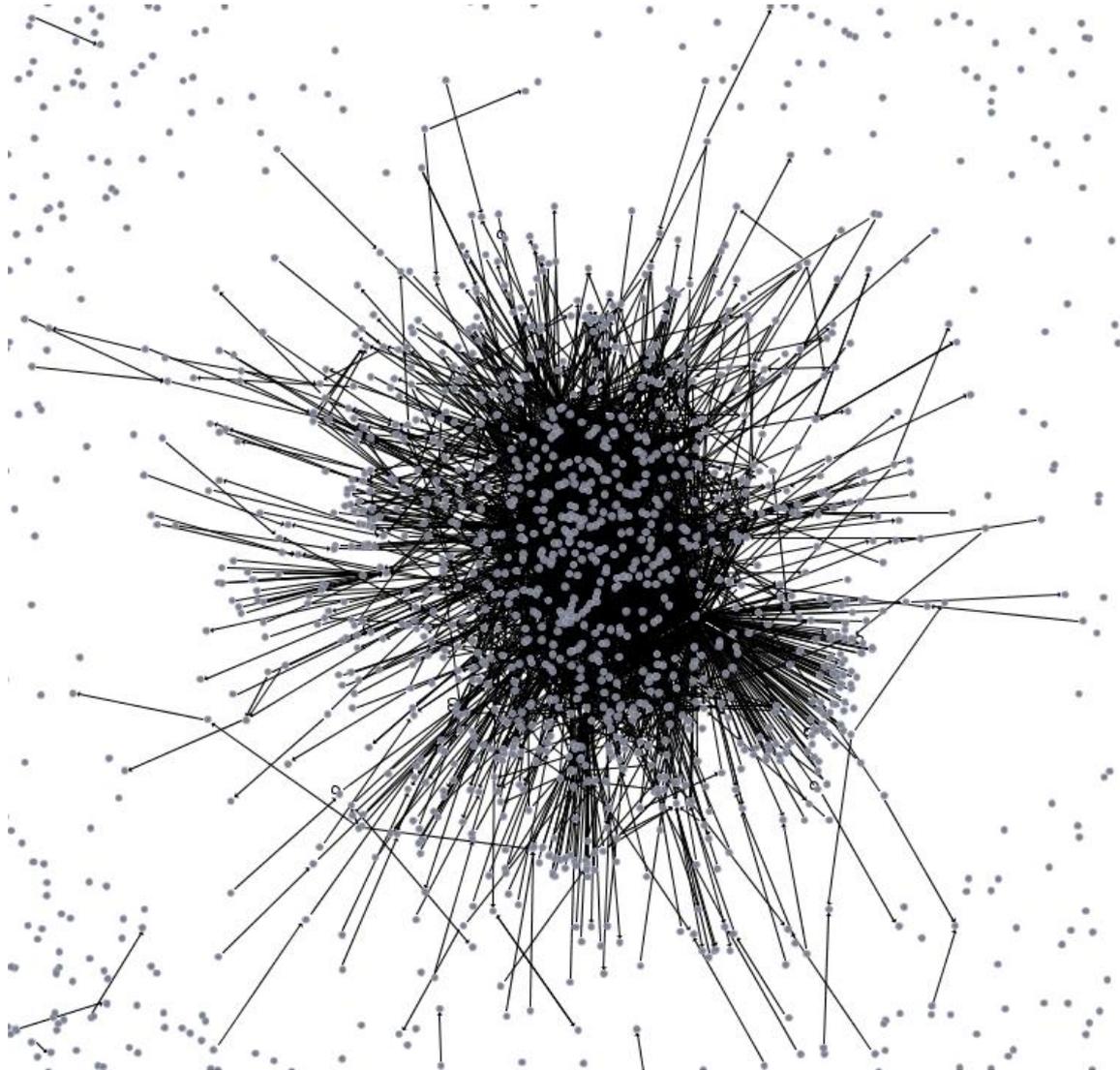
Nr of nodes: 1187 % of the total nodes: 23.1%

Nr of links: 1942

Average degree – 3.27

Percentage of new partners – 91.8% (1090)

Percentage of old partners – 8.2% (97)



In a graph with 1187 links and their respective connections it is extremely difficult to make considerations on its topology. The density of nodes and links in the figure evidences this concern. The total degree distribution can clarify this aspect. Considering the agents who have a total degree bigger than 20 partners we listed 20 different elements.

Table 8 – Twenty biggest total degree in Simon Ruiz network, 1574-1580

Agent	Total degree
Simon Ruiz	255
Luis Gomes	73
Hernando de Morales	64
Benedeto Bonvisi	63
Bernardino Bonvisi	53
Antonio Gomes	52
Lope de Arciniega	39
Hernando Correa de Velasco	35
Antonio Fernandes	34
Filipe Jorge	32
Antonio Vasquez	30
Francisco Spina	29
Heritors of Ludovico Bonvisi and Benedeto Bonvisi	28
Pedro Ruiz Embito	25
Diego de la Pena Manuel Gomes de Elvas Juan Ortega de la Torre Gonçalo Peres Martinez	24
Rui Nunes Nicolau Rodrigues de Evora	21

Source: Bills of exchange and commercial correspondence of the Archivo Simon Ruiz.

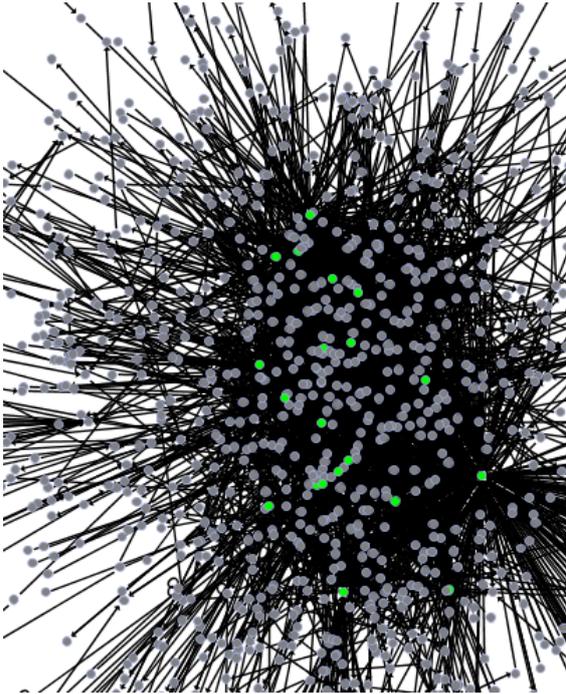


Fig. 10a – 20 biggest total degrees in Simon Ruiz's network, 1574-80.

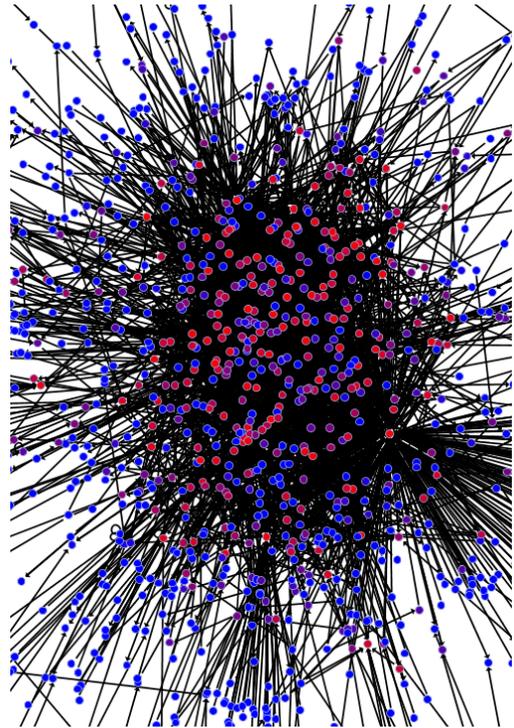


Fig.10b – Betweenness of Simon Ruiz network, 1574-80. Red the more important in the network, blue the less important

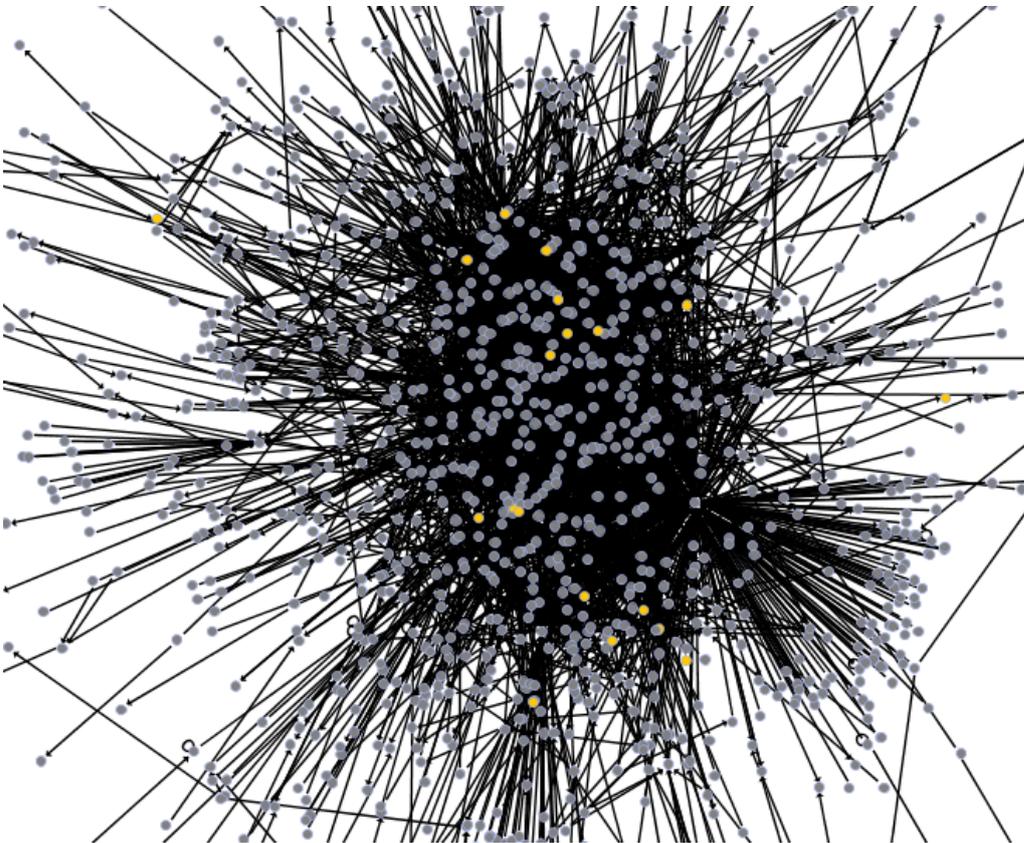


Fig. 11 – Bankers in Simon Ruiz network, 1574-80.

The few number of agents (1,68%) who were connected with a great number of partners indicate a star shaped graph, dominated by one great sub graph, which center was Simon Ruiz. At this period, Simon Ruiz appeared almost exclusively as a finance man, even if some trading activities are recorded in the correspondence with agents in Portugal. He traded in American indigo and Brazilian wood, but also in spices as pepper, cinnamon, clove and ginger, salt and wheat from France and the Baltic. His privileged trading partners were the Portuguese Gomes de Elvas, who accumulated capitals in the Oriental trade and its reselling in Antwerp. They were part of 20 biggest total degree – Luis and António Gomes, Manuel Gomes de Elvas and Antonio Fernandes de Elvas. They were related, as well as Simon Ruiz, with other agents in Antwerp who were part of more connected agents as Filipe Jorge, Rui Nunes or Nicolau Rodrigues de Evora. Other important central figures were the Bonvisi of Lyon, linked directly to Simon Ruiz, and some representatives of Simon in Spain, such as Lope de Arciniega in Madrid, Hernando Correa de Velasco also in Madrid but dealing directly in the Court and Antonio Vasquez, a banker. In conclusion, the Simon Ruiz network was, at this point, centered in the axis Lisbon-Madrid-Antwerp and Madrid-Lyon.

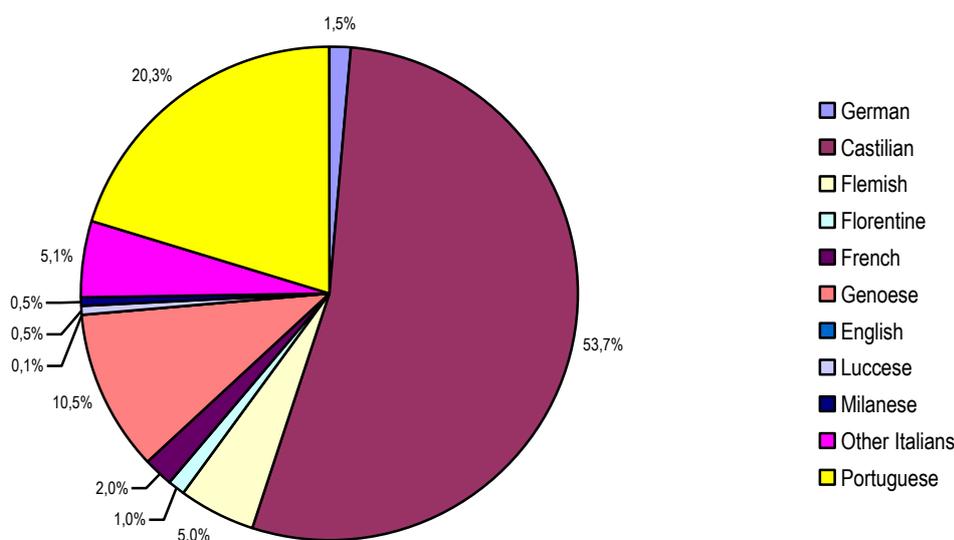
Comparing the position of these central agents with their betweenness degree, one can perceive that they are represented by the red color, meaning they were crucial for the maintenance of the network equilibrium. Confronting the three graphs' representations it seems sustainable that some of the more linked nodes were, not only more important in the network, but they were also bankers, like the Bonvisi, Antonio Vasquez or Nicolau Rodrigues de Évora. In fact, all the bankers were essential to avoid the collapse of part of the network, looking to their betweenness representation. In this period, banking activity was essential for the participation of the Ruiz firm in the *asientos* business. They were also fundamental to the banking activity of Simon Ruiz, when he acted as payer or taker, mainly in relation with other Castilian agents. In these cases, important banking figures as Gaspar Suarez, Juan Ortega de la Torre or Francisco de Bobadilla, intermediate the payment of a bill of exchange to the beneficiary or the deposit of a certain amount from the donor to the taker. For example, on the 5th February 1579 Simon Ruiz was sending 413 *écus* to the Portuguese Fernão Mendes de Sá and Diego Aleman, who were in Lyon. For that he made a deposit in the bank of Juan Ortega de la Torre from where the taker, in this case, Ventura de Marriega, picked the amount in question⁷⁹. In 1574, Simon Ruiz acted as a payer of a bill of exchange in Medina del Campo, but he did not pay it directly to the beneficiary,

⁷⁹ Bill of exchange ASR-02.1579.198.

João Fernandes de Castro. Instead, he did it through a deposit in the bank of Gaspar Sanchez. The beneficiary went to the bank and raised the amount from Simon Ruiz's account⁸⁰.

If this period was marked by the entrance of Ruiz in the public credit affairs, sending money to Flanders and being financed by the Lyon axe, mainly by the Bonvisi, how did this new course in the activity change partner choice criteria?

Chart 5 - Nationalities of Simon Ruiz's partners, 1574-1580



The percentage of unknown individual nationalities for this period is 25.3% (300 cases).

The percentage of known individual nationalities for this period is 74.7% (887 cases).

Source: Bills of exchange and commercial correspondence of the Archivo Simon Ruiz.

Even if almost the totality of the agents is a new partner in the network, the percentage of old partners is equivalent to almost half of the partners from the previous period. Between 1574 and 1580 the business strategy has changed, and also did the criteria in choosing partners, though more than half of the agents continued to be Castilian. On one hand, Castilian agents after the bankruptcy had an opportunity to replace Genoese who were seriously affected (BOYAJIAN 1983, 3), at least in the two first years after it. What happened was that the part of Castilian merchants engaged in Seville trade and in businesses with the Genoese had collapsed. However, the remaining ones were not solvable enough to send high sums of money to Flanders (EHRENBERG 1955, 308). On the other hand, Simon Ruiz was, at this time, one of the most

⁸⁰ Bill of exchange ASR-01.1573.023.

successful business men in Spain and, after the second half of the 1570's, a significant part of the financial transactions in the country passed through his company. These internal transactions involved mainly Castilian agents. However, their spatial distribution was more varied than before. The decadence of Medina del Campo fairs impelled financial activity to the neighborhoods of the Court; Madrid and Medina del Campo register almost the same number of individuals. In reality, Madrid became much more international than Medina, as it is proved in table below. The most relevant figures in the *asientos* business had to mark a position near the court to intervene directly in the Castilian treasure. It is the case of Juan Curiel de la Torre or the Espinosas. Other spaces which attracted the financing activity were Burgos or Valladolid. Seville was clearly losing importance as a financial center.

Table 9 – Places of action of Simon Ruiz partners according to nationalities, 1574-1580.

	Au gs bu rg	Ant wer p/ Ma ast rich t/ Na m me n	Ba rce lon a	Bilbau/ Laredo /Vitoria	Br u g es	B ur g os	C ol og ne	E lv a s	Fl or en ce	G e n o a	I n d i a	Li s b o n	L y o n	M ad rid / Al ca la	M e di na del Cam po	M il an es	N ant es	P ari s	R om e	R ou en	S e vil le	T ole do	Val lad oli d	Oth er Por tug ues e pla ces	Ot he r Spa ni sh pl ac es
Ca stili an		34	9	11	5	28			5			14	5	70	138		4	5		16	27	9	9		25
Fle mis h		20			1							1		8	7						1	2	1		
Fre nch		4											4	3	1			2		1					
Ge noe se		8	3							11		2	2	24	11						8				1
Ger ma n	2	2					1					2		2	1								1		
Mil ane se													1			1									
Por tug ues e		30				1	2	8	1		1	66	1	18	11		3	1	1	1		1		16	
Tus can s									1				9	1	1						1				
Tot al	2	98	9	11	6	29	3	8	7	11	1	85	4	126	170	1	7	8	1	18	37	12	16		26

The percentage of unknown individual nationalities for this period is 37.3% (443 cases).

The percentage of known individual nationalities for this period is 62.7% (744 cases).

Source: Bills of exchange and commercial correspondence of the Archivo Simon Ruiz.

The spaces near the Biscay Gulf like Bilbao, Laredo or Vitoria are active parts in the network during this period. As Jean-Philippe Priotti shows, the connections between this region and Brittany and the Netherlands were privileged in the sixteenth century, mainly in the exports of Spanish wool and iron and imports of textiles and draperies produced in Northern France, Flanders and Brabant hinterlands (PRIOTTI 2004, 90). In Ruiz's correspondence, one is aware of how the firm was deeply involved in buying these sorts of textiles, importing and then reselling them in Spain and in Portugal⁸¹. On the other hand, to send money specie to Flanders, the Biscay Gulf was essential to launch the naval convoys with silver. Spanish silver was redistributed from Seville to these Northern ports. Sending silver from there to Antwerp was a way to shorten distance and to gain efficiency in this circuit.

Other central space in Castilian merchants' activity was Northern Europe. Places like Nantes, Rouen, and Antwerp and nearby places like Maastricht, Cologne, Mons, Namur were important for the strategy of the network. For those who were participating in the *asientos*, and trading with autochthonous products, Antwerp was still central as a place of destination for the money lent to the Spanish Crown and as a trade market. But the Low Countries' war, which officially began in November 1576, compromised the economic activity of the city for good. Since that day and for eleven more, the Spanish miserable and famine troops pillaged the city. The results are described by H. van der Wee:

'More than seven thousand civilians and soldiers lost their lives. Six hundred houses were burnt. The booty amounted to two million guilders in specie and numerous precious objects dragged away in large quantities. The damage to the buildings alone was estimated at 5 million guilders. (VAN DER WEE 1963, II, 254)'

Running from the adversities, commercial and financial firms emigrated for other nearby places as Bruges, Maastricht, Dunkirk, Cologne, Rouen or Paris. The profits of maritime trade were smaller and smaller. Piracy was a real risk. The decision of trading with Flanders implied choosing a strategy of importing/exporting goods using Nantes or Rouen as destiny ports, and then reach Flanders by land. Braudel already described that circuit in his *Mediterranean and Mediterranean world in the age of Philip II* (BRAUDEL 1983, I, 533). Nantes and Rouen served as intermediary centers for western merchants. Although Castilians were present in these ports (BRUNELLE 1989), they depended from hinterland agents in this circuit. That is why the presence of French agents in the network has raised in this period. Castilian agents like Simon

⁸¹ *Vide*, f. e., letters ASR-034.1576.003, ASR-034.1576.033.

Ruiz used products demanded by French population which they sold in these markets and bought, in exchange, their wheat and textiles. That was what happened also with André Ruiz, who represented his brother and the Gomes de Elvas, reselling Portuguese pepper and buying Brittany's wheat⁸². The payments and the silver became available either in Rouen or in Lyon financial centers, as the bills of exchange in this period demonstrate. This was not a specific circuit of Ruiz, but it was used by other merchants from other nationalities, as Jacques Bottin has evidenced in his works (BOTTIN 1998, 2011; SKYRMS 2010; MATHIEU 2001).

The second group largest national group was composed by the Portuguese. They were particularly crucial for the *asientos* business, in which Simon Ruiz invested, in the second half of the 1570s. They were mainly settled in Lisbon and in Antwerp and its surroundings. In fact, after the troubles in Antwerp, Portuguese merchants were the largest group who stayed in the city; the great market for the Oriental products was still there after all (VAN DER WEE 1963, 256; POHL 1977, 165-177). They were closely related to the Oriental trade, dealing in spices, textiles. The silver was for them, essential to trade with India, China, Japan and all the Southeast Asia. Boyjian also describes their small scale financial activity,

' [...] lending to aristocrats and officials sums secured on jewels, real estate, or annuities. [...] In still other transactions they became debtors of aristocrats who lent the merchants small sums on deposit at interest. The merchants thus collected funds from many sources to supplement their own and then invested them in commercial ventures (BOYAJIAN 1983, 6).'

With accumulated capital and well positioned, geographically, Portuguese merchants were the best partners for *asientos*. They had capacity to invest and they had not both the availability to conduct the loans to Flanders, and also the conditions to collect the silver reales of the «licencias de saca» in Lisbon and reinvest in spices and other colonial luxury products in Lisbon. In the letters where *asientos* were accomplished between Simon Ruiz, António and Luis Gomes de Elvas, Duarte Mendes, António Fernandes de Elvas and Tomas Ximenes, one of the main characteristics of the deal was to force the Spanish king to accept the payment of the loan in Lisbon⁸³.

⁸² Vide letters from António Gomes to Simon Ruiz. The issue is discussed in almost all the letters exchanged between the two, as the one of the 29th July 1577. This situation is also described by Henri Lapeyre in his book *Les Ruiz: contribution à l'étude du commerce entre la France et l'Espagne au temps de Philippe II*, particularly in the chapter related with the commerce between Spain and France in times of war – *Les repercussions des guerres II – L'insecurité des mers (1568-1585)* in (LAPEYRE 1955, 407-422).

⁸³ Letter from Antonio Gomes to Simon Ruiz on the 1st November 1576. ASR-034.1576.040.

One of the more studied characteristics of these Portuguese agents is their religious affiliation. Almost 60 % of the Portuguese agents involved in this network between 1574 and 1580 were identified as New Christians⁸⁴. Families like Mendes, Nunes, Gomes de Elvas, Rodrigues de Évora appear repeatedly in the list of Simon Ruiz's partners. Other clue is their residence in Portugal, near the borders with Spain. Most of them were descendent from the Spanish expelled Jews. Even so, it seems choosing to cooperate with this specific agents was not necessarily decided by a common religious ancestor of both parts (following the thesis of the New Christian ancestors of Simon Ruiz himself). It could happen, because the wealthiest and most successful Portuguese commercial and financial agents were indeed New Christians. David Grant Smith has proved that by the third and fourth quarters of the sixteenth century, almost 75 % of the Lisbon merchants were, in fact, descendants from Jews (SMITH 1975, 17-18).

Genoese represented about 10 per cent of the agents involved in the network. Their weight among the most participative agents had diminished between 1574 and 1580, but they were still relevant. In reality, their activity was vibrant until 1575, having lost their prominence in the next two years. But the signature of an agreement between the Genoese bankers and the Spanish king has resulted in a Genoese revival. The signature of a *medio general* in 1577 was determined by a general incapacity of the Spanish Crown to make available in Italy and in the Netherlands the amount of money the monarch needed. In exchange to new loans, the Genoese agreed to reduce the former debt: one third, would be payable by the revenues of the Church assets and the other two thirds by the rents of the State «Salinas». That is why one can watch some Genoese agents in the network after this date, who had also previously participated in the *asientos*: Stefan Lerocar, Nicolo Grimaldo or Vicencio Gentili.

After the troubles in Seville they almost retreated from there. They based their operations mainly on the Court siege, Madrid. In the network, by this time, they were acting as transference vehicles to Lyon and used Spanish bankers, like Simon Ruiz, to transfer and to receive money either from Lyon, or from Besançon or Genoa itself. One should not forget that in 1579 they created the Piacenza fairs. Among other things, they were also responsible for getting from the Crown exclusive licenses to get the silver away from Spain, through Barcelona and Valencia to Italy. Transactions between Besançon fairs and Barcelona were repeated, whose protagonists were the agents Mutio Paravicino or Dario Paravicino, in Valencia, and Francisco Granolasch, in Barcelona.

⁸⁴ This identification was based in specialized bibliography on the Portuguese New Christians, such as (FRADE 2006; ALMEIDA 2009; SILVA 1959; SILVA 1956; GORIS 1925; SALVADOR 1978; KELLENBENZ 1987)

Business strategies in the network also were built using other Italian spaces, like Florence, where Castilians were key contacts. The favorite one for Simon Ruiz was Baltazar Suarez. Since 1579 he was participating as a donor or a taker to Simon Ruiz⁸⁵. According to Ruiz Martin, Florence business was mainly directed to export cochinitilla and Spanish wool to the North Italian textile industry (RUIZ MARTIN 1965, CIV). Suarez also represented Portuguese firms (RUIZ MARTIN 1965). With the Mediterranean blocked by Spaniards and Ormuz still controlled by the Portuguese, Florence was the place of spice's distribution to Venice. If Simon Ruiz was dealing in spices in partnerships with Portuguese agents, like António and Luis Gomes de Elvas, it is plausible he was personally intermediating business between Lisbon and Florence and receiving payments from that trade. Even if one Portuguese of the network, Fernão Mendes de Sá⁸⁶, is placed in Florence, the privileged partners for this Mediterranean business were other Castilians like Fernan Lopez de Medina, Bautista de Burgos or Diego Lopez Aleman.

With the momentary collapse of Genoese financial power within the network, other agents regained importance. That was the case of the Flemish and Germans. The Fuggers were the first substitutes for the Genoese in the Spanish public finances. Lucas Walter, their representative in Lisbon, Marcos Fugger in Madrid and other Germans still in Antwerp completed the money circuit. Flemish were vital in the Antwerp market dealing with the capital transfer between Castile and Northern Europe. The circuit was pretty closed in terms of current accounts. They appear as takers and payers in both places, and they almost exclusively established this circuit among themselves. However, in Madrid and Medina del Campo they were a few, dividing the risk by multiple country fellows in Antwerp. Near the Court there was Andre de Gallen, Benito Boyer, Diego de Meinert, Enoch de Morin, Gregorio Cuters or Jacques Goesens.

What seems to result as analytical output is that the period from 1574 to 1580 changed the structure of Simon Ruiz network. The business opportunity provided by the 1575's bankruptcy conditioned partner's choice, changing the profile of the network, now mostly oriented to financial operations. Even so, trade was not forgotten and the integration of the Portuguese and Spanish colonial products, the Flemish and Italian textiles, the Brittany wheat have permit to accumulate capital and to invest in financial profitable markets. The survival, after 1575, of the merchant Simon Ruiz, in times when some important Castilian firms had defaulted, reinforced his business centrality and impelled him to participate in the *asientos* business. In order it could happen, an adaptation of the network was needed, reinforcing connections with agents, who had still capital to invest jointly. The Lisbon axe was the elected one, because of its easy linkage to the Antwerp

⁸⁵ Bills of exchange ASR-02.1580.116, ASR-04.1586.039.

⁸⁶ Bill of exchange ASR-02.1579.199.

market, where the money was demanded. This collaboration with Portuguese, Flemish and Germans made Lisbon and its spice markets move, in times when they were already in a declining trend. Other course, even if less strong in this period, was betting in Mediterranean business. The relation with Florence, a demanding consuming and productive market, encouraged part of the Castilian partners to invest there. Genoese ties, even if weaker, were still vital for granting financial support to the network. They were essential to provide money to the Spanish Crown, through Lyon financial market.

'Lyon agissait aussi comme lien et point intermédiaire pour tous les virements d'argent entre la Castille et l'Italie, puisque les Bonvisi se chargeaient de transférer l'argent reçu à Lyon vers les villes de Venise, Florence ou Milan ou inversement (CASADO ALONSO 2010).'

The bankruptcy of 1575 and the Netherlands war were after all an opportunity of investment and growth.

6. 1588-1590: Europe in conflict

In the decade of 1580s Simon Ruiz network registered a continuous growth. The year of 1586 registered 452 nodes and 647 edges, with an average connectivity of almost 3 links per node. But the conjuncture between 1588 and 1590 was particularly demanding for trade and financial activity. Even if the annual growth of the network registered contractions in 1588 and 1590, the variance was rather small. During this three-year period, the average number of nodes in the network (411) was similar to the same indicator in 1580. During this time frame, the average of growth in partners' number was negative in almost four per cent, when compared to the previous time period.

Table 10 – Simon Ruiz network yearly growth, 1588-1590.

Year	Number of nodes	Nodes' Growth rate (%)	Number of edges	Edges' Growth rate (%)	Average degree	Growth of the average degree
1588	382	-15.5	478	-26.1	2.5	-0.36
1589	471	23.3	706	47.7	2.99	0.49
1590	380	-19.3	460	-34.8	2.43	-0.56
Average annual numbers	411	-3.8	548	-4.4	2.64	-0.14

Source: Bills of exchange and commercial correspondence of the Archivo Simon Ruiz.

Regarding the connectivity of the network we observe similar conditions. The number of links in 1586 is 647, which reveals a contraction of 26 % in 1588. Nevertheless, this contraction seemed to have a minimal impact. Even so, the annual average connectivity dropped from the beginning of the 1580s decade and assumed, at this time, the value of 2.64 links per node.

The conflicts between Spain and other counter powers of the European background arouse. At this chronology the troubles were not exclusively focused in the Netherlands, but the alert extended to France and England.

Queen Elizabeth's veiled support to the rebels in the Netherlands and the French Huguenots (in the person of Henry of Navarre), side by side with the Spanish assistance to the Catholics in Scotland and in Ireland had precipitated an open conflict between both kingdoms. Between 1585 and 1590, Philip II extended an embargo to English ships in Iberian ports, similarly as it had been declared to the Dutch trade. He wanted to restrain the rebel's commercial activity with the Iberian and colonial products and markets. On the other side, the British queen was pressured to retaliate. Together with the English merchants' actions of plunder and privateering off the Iberian coast, she authorized a voyage by Francis Drake, whose goal was to intercept the silver fleet and raid the Spanish Empire. He attacked Vigo and pillaged American colonies of Santo Domingo and Cartagena. Commerce resented and the Spanish maritime economy's safety was compromised as Drake's expedition to Cadiz in 1587 demonstrated.

Besides the destruction of several ships, the Spanish Armada, compromised to invade England, was launched to the Atlantic on the 30th May 1588. The plan failed and even if the naval power of the Spanish was not compromised, the merchant fleet was seriously damaged. According to Elliot, eighteen of forty-one merchants and an undetermined number of seaman had disappeared (ELLIOT 2000, 224). To build this Armada, the Spanish Treasure appealed for

massive financing, through *asientos* contracts, which were rapidly paid by the end of 1588, so that the new Indian fleet could be armed and American trading activities revitalized (MARTÍN ACOSTA 1992, 168). Even if commercial contacts with the Indies and the supply of silver species in Seville were not compromised, 'entre 1589 y 1591, 235 embarcaciones inglesas navegaban entre el Atlántico oriental y América, atacando tanto la flota de Indias como las posesiones españolas (MARTÍN ACOSTA 1992).'

Philip II also decided to support the Catholics in the French religious wars, after the death of Henry III and his opponent, the Duke of Guise. The Protestant Henry IV was then the legitimated successor fighting for the French throne. In 1589 Philip II decided to openly intervene in the conflict, not only financially supporting the Catholic «League», but also asking Farnesio to send his troops to France, putting the Low Countries' conflict aside and helping the French faithful to Rome. This conflict also forced the Spanish sovereign to ask for extra money to sustain another conflict. This fact could justify the growth of activity in Simon Ruiz network.

Measures taken in 1590 by the Spanish Crown to raise money for this new campaign could have been responsible for conditioning the tenuous retraction of the network in the same year. In April, a new tax was imposed to Castillians, in order to collect eight millions of ducats in six years: the «milliones». The tax was applied consumption goods of first importance: wine, meat, olive oil, and vinegar. Other measures were taken to consolidate the Kingdom's finances, such as the abduction of American Indian treasures in the silver fleets, becoming Crown's property, and also the seizure of private agents' merchandises arriving to Seville and registered on the *Casa de la Contratación* (MARTÍN ACOSTA 1992). Even if one does not know the effects of these measures in the activity of the network in general, it seems plausible that it had suffered some disturbance. As it was demonstrated above, Genoese and Castilian bankers are one of the largest groups in the network and some of them were involved in arming ships to the Spanish Indias, in order to maintain regular trading contracts.

Commercial activities among the members of the company and the dispatch of products to and from Nantes or Rouen have been compromised (with its extension to the Flanders' commercial circuits), as Lapeyre evidences through the correspondence between Simon Ruiz and his nephew in Nantes, the Bonvisi in Lyon and Ontaneda in Rouen (LAPEYRE 1955, 428-435). The financial stability of Lyon, where the great financiers of Ruiz were settled, was deeply in danger, as well. Fairs were schedule latter than usual, and an excessive abundance of capital devalued the price of transactions (LAPEYRE 1955). Regarding the evolution of Bonvisi profits in Lyon, Gascon observed a deep vertical descendent curve from 1587 onwards. In this year, their revenues achieved 90000 *écus*, in 1590 50000 and in the following year only 10000 *écus*. This

house is representative of a set of commercial and banking activity, as well as of the ensemble of the economic activity of Lyon fairs (GASCON 1971, 609-610).

The network topology of this period shows a star-shaped graph, constituted by one large star and few other smaller sub-graphs centered in certain agents, as Hieronimo de Fonseca in Rome, Pedro de Alava in Rouen, Baltasar Suarez in Florence. These agents intermediated the actions between Medina del Campo or Madrid and the privileged centers for Simon Ruiz financing activity. This topology indicates a high degree of network's centralization in few agents.

At this time he was dedicated almost exclusively to banking, relying in these agents his representation in great economic centers. According to Lapeyre, in 1585 Simon offers a society to his nephew Cosme and his employee Lope de Arciniega in equal shares, according to which he gives capital and participates in the benefits. The direction of the company is given to Lope de Arciniega, even if Simon was still usually consulted for the most important and risky operations. This company had a truly commercial character, while Simon Ruiz was dedicated to the great finance and the *asientos* (LAPEYRE 1955, 72).

Being the center of the network, Simon Ruiz had a total degree of 190 links, while the other agents with a total degree superior to 20 links per node never reached 70 links per node. These agents with a larger number of total degree only represent 2.23% of the total number of nodes.

Fig.12 - Simon Ruiz's network betweenness distribution, 1588-1590

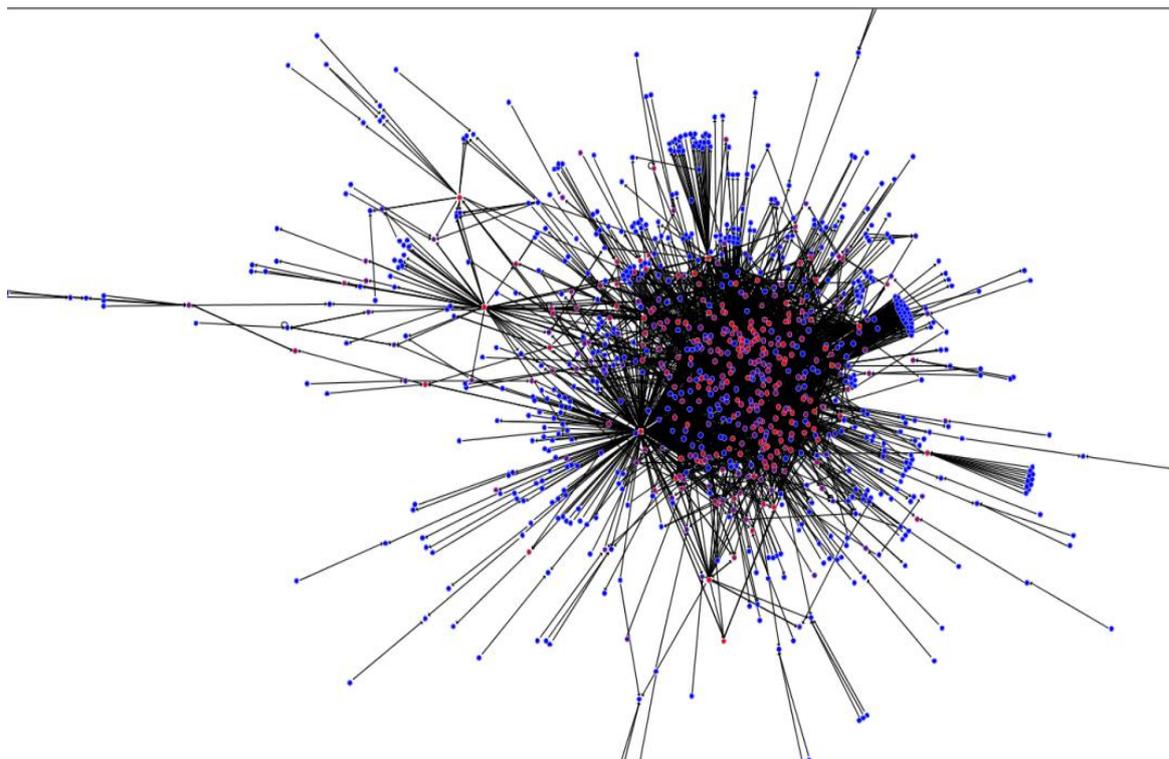
Nr of nodes: 978 % of the total nodes: 19%

Nr of links: 1796

Average degree – 3.67

Percentage of new partners – 82.9% (1090)

Percentage of old partners – 17.1 % (167)



Comparing those agents with the ones with a greater betweenness centrality, one can observe a match, even if those who greatly support the network are in a large number. With the exception of Simon Ruiz, the ones with a higher total degree are Steffano, Bernardino and Antonio Bonvisi, then the heads of the Bonvisi house in Lyon, which continued to be the strongest financial support of the Ruiz firm, especially concerning the *asientos*, which needed great amounts of specie available in a short period of time. Baltasar Suarez, in Florence, was one of the favorite contacts of Simon Ruiz when he needed to send currency to Northern Italy without using the Genoese in Piacense. Castilian bankers also continued to be primordial to the functioning of the network, as Joan de Carmona or Gonzalo de Salazar. Their function is the same as in the previous period: they are the depositaries of Simon Ruiz money in Madrid or

Medina del Campo, choosing the suitable taker for transferring money to Florence⁸⁷, Lisbon⁸⁸ or Lyon⁸⁹.

Even with a smaller connectivity, Lope de Arciniega (35) and Cosme Ruiz (36) had, in their own, their linking contacts. Their strongest ties, because more frequent, are maintained with the Bonvisi. Those acted in a four people counterpart enterprise in Lyon with the designation «Benedeto, Bernardino, Stefano and Antonio Bonvisi» and in Piacense with «Benedeto and Bernardino Bonvisi». They were also paying or taking bills of exchange to and from agents in Lisbon, connected with the Antwerp trade, such as Miguel Puigener (also with a higher total degree of 21 links per node) and Miguel Camarena⁹⁰.

The *asientos* business gave high preponderance to some agents in Antwerp, connecting Medina to the beneficiaries of such amounts. The Portuguese brothers Simão and Nicolau Rodrigues de Évora, Manuel Henriques, and the Flemish Martin de Varron or the Castilian Diego de la Pena.

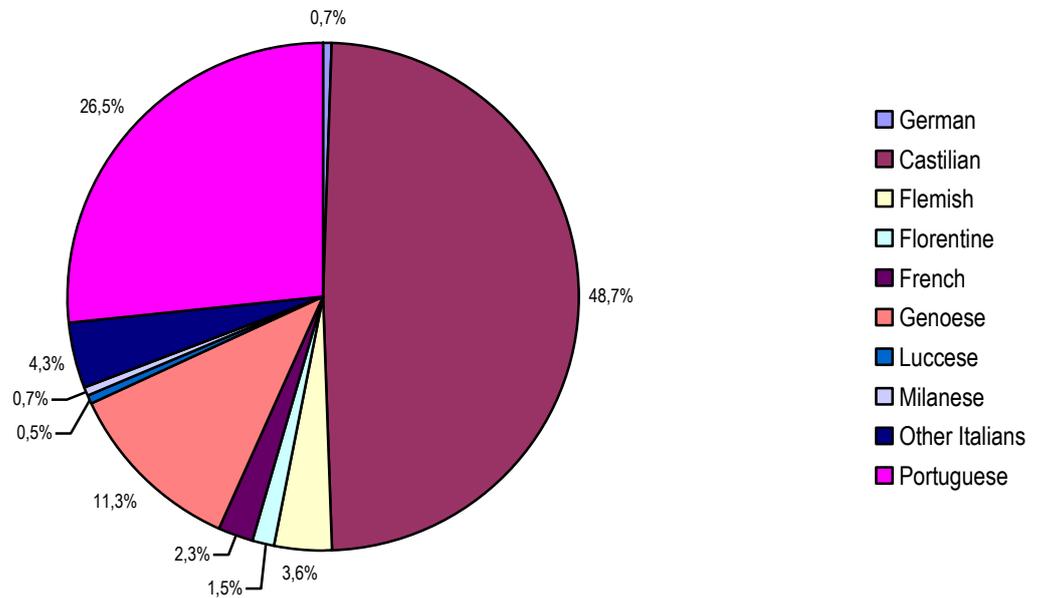
⁸⁷ Bill of exchange ASR-05.1589.033.

⁸⁸ Bill of exchange ASR-05.1589.735.

⁸⁹ Bill of exchange ASR-04.1588.134.

⁹⁰ Bill of exchange ASR-05.1589.684.

Chart 6 - Nationalities of Simon Ruiz's partners, 1588 - 1590



The percentage of unknown individual nationalities for this period is 23.8% (233 cases).

The percentage of known individual nationalities for this period is 76.2% (745 cases).

Source: Bills of exchange and commercial correspondence of the Archivo Simon Ruiz.

Castilians maintained their weight as privileged partners in the network, of almost half of individuals whose nationality was identified. Even so, their spatial distribution (table 11) indicates some strategic displacements of these agents according to the best business opportunities. Castilian agents were now and again mostly concentrated in Medina del Campo. The vitality of the fairs was reactivated after a reform which began in 1578. After three years without fairs, the king gave orders to its realization in October 1578, where every delayed payment was to be liquidated, without any prorogation. These payments were, in fact, done quickly and to reinforce Medina del Campo's exchange fairs Philip II, in a diploma of the 7th December 1578, decided that in every foreign place where exchange fairs existed, businessmen and bankers should deal with Medina del Campo fairs. Of course, his lack of jurisdiction abroad could not condition these men actions. But it did encourage to reestablish the financial axe Lyon-Medina del Campo (LAPEYRE 1955, 491). The fairs began to regain certain regularity again.

In April 1582, Philip II ordered an enquiry on the causes of Medina del Campo fairs decadence, in which should be listen both the villages with financial weigh in Spain, and also individual business men. The answers agreed on declaring the default of 1575 responsible for the

fairs' disorders, as well as the increasing taxation on commercial operations. In July 1583, the king stipulated the realization of three fairs per year with 33 days duration in February, July and October, without prorogations. The freedom of exchange was guaranteed with a restriction of not dealing with a fixed date of exchange during the fairs days, when bankers were not allowed to exchange outside the fairs. With this reform, and according to Lapeyre, 'pendant plus de dix ans, ells allaient fonctionner des conditions normales (LAPEYRE 1955, 495).'

Even less than in the previous analyzed period, Madrid was still representing a very competitive financial center regarding Medina. The proximity of the Court and the negotiation of *asientos* valorized the new capital as an economic center. In this network, Simon Ruiz's company was directly financing other Castilians and even some Genoese *asientistas* by the hands of some important employees of the firm, as Francisco de Bobadilla. Bobadilla was the representative of Simon Ruiz and of the firm he maintained with Lope de Arciniega and Cosme Ruiz. He received and sent money to agents in Lyon, Antwerp or Lisbon in his boss's name, from Madrid⁹¹. Merchants, who participated in the network activity settled in Valladolid, were more numerous. Among these twenty six Castilian business men living in Valladolid, there was Simon Ruiz. This city was not a commercial center, but it was still the headquarters of the *Chancelaria*. This institution had the jurisdiction on the Castilian courts and dealt with permanent administrative affairs. It was plausible that one could merge into some troubles and judicial processes; 'on avait doc avantage à se trouver sur place pour pousser l'épée dans les reins à ces magistrats d'une lenteur désespérante (LAPEYRE 1955, 76).' It was common that the transferences between Rome and Simon Ruiz were paid in Valladolid. The payers with capital to perform such role were, in fact, officers from the Royal house: attorneys, ombudsmen, secretaries, General Depository of the Royal Chancellery, official writers of the courts.

⁹¹ Vide f.e. Bill of exchange ASR-05.1589.683.

Table 11– Places of action of Simon Ruiz partners according to nationalities, 1588-1590.

	Au gs bur g	An tw er p	Bar cel on a	Be san çon / Pla cen za	Bi lb a u	B ur go s	E lv a s	Fl or en ce	G e n o a	Li s b o n	L y o n	M a dr id	M ed in a de l C a m po	M il a n	N an te s	P a ri s	P o rt o	R o m e	R o u e n	Se go via	S e vil le	T ol e d o	Val lad oli d	Oth er Por tug ues e pla ces	O t h er S p a n i s h p l a c e s	
Cas tilia n		22		3	8	11	1	14		1 1	1 2	2 3	12 7		4		1	1 6	1 2	3	1 2	3	26		24	
Fle mis h		11			1					2		5	3									2		1		
Fre nch											5	1	1		2				2	1		2				
Ge noe se		12	2	23					2	3	1 4	1 1	12									2				
Ger ma n	1									2		1	1													
Mil ane se		1		2						1								1								
Por tug ues e		23						1		9 5	1 0	1 0	15	1	1	1	9	9				1		3	14	2
Tus can s		1						7		1	5															
Oth er Itali ans		2		5				3		3	5	1	5					2								
Tot al	1	72	2	33	9	11	1	25	2	1 1 8	5 1	5 2	16 4	1	7	1	1 0	2 8	1 4	4	1 9	3	30	14	26	

The percentage of unknown individual nationalities for this period is 28.6% (280 cases).

The percentage of known individual nationalities for this period is 71.4% (698 cases).

Source: Bills of exchange and commercial correspondence of the Archivo Simon Ruiz.

Bilbao continued to maintain its important role in trading ventures concerning the connection with ports in the Northern Atlantic: Nantes, Rouen or Antwerp and its satellite ports. With the interference of the Spanish in the French civil war, the smuggling of Flemish

merchandises was organized through La Rochelle, Bayonne and other French ports and enter the Iberian Peninsula through Bilbao, from where departed American and Canary islands goods. On the other hand, Bilbao was also the exit door of Portuguese colonial commodities from Lisbon and the North of Portugal to Flanders and France (PRIOTTI 2004, 108; DRELICHMAN 2007, I, 695).

These contacts with Antwerp are traceable in the company's bill of exchange. In 16 April 1590, Pedro de Ortiguy was the payer to Simon Ruiz of some revenues sent from Antwerp by Nicolau and Simão Rodrigues de Évora. Those were repeated interactions⁹². Simon Ruiz also included in his businesses more Castilians operating in Seville. American silver was reaching Spain in more quantity and, at this particular time, the network was profoundly embedded in the public credit business, which was strongly dependent from the interaction between Seville and the Indian fleets. Even so, Chaunu claimed that this was the end of the provisional prosperity of the 1580s, especially in what concerns individual trading revenues. He sustained the hypothesis of the existence of '[...] une immobilisation insolite des capitaux investis dans le commerce, par ralentissement des rythmes de rotation (CHAUNU 1960, VIII 2, 779).' This situation was rooted in a disruption in the concentration of all capitals in the whole potential of the Indian trade, which was interrupted by the conflict in which Spain began to be involved. First, the construction of the Armada. Then, the conflict in France which jeopardized connections between Seville and Lyon, even if it was already being replaced by Piacenza fairs.

Money transfers included sending revenues to other Castilian agents who were settled in the Court or near judicial instances. The activity of Cristoval de Aldana confirms this statement. In July 1588, he was the taker of Hernando de Benavides, in Seville, to Alonso de Rivanadeira in Valladolid⁹³. Yet the direct connections with Antwerp were maintained even if less frequent, mainly between Genoese agents. Aldana is paying a bill of exchange of about 750000 maravedis in Seville to Carlo de Vivaldo and Juan Giacomo Spínola. The donors in Antwerp were Bautista Spínola and Aurelio Cataneo⁹⁴. We had not found any peremptory proof of a trust tie between this agent and Simon Ruiz, but the existence of documents in which Simon Ruiz did not participate directly and was not mentioned in his personal archive, indicates that Cristoval de Aldana could, in fact, be a representative of Ruiz in this Guadalquivir port, where Casa de la Contratacion was still paying yearly the amount due by the Hacienda to the asientistas.

Agents placed in Antwerp continued to be central to this network business strategy. In this period, the number of Castilians in the city almost equals the Portuguese. The military

⁹² Bill of exchange ASR-05.1590.308.

⁹³ Bill of exchange ASR-04.1588.096.

⁹⁴ Bill of exchange ASR-05.1589.367.

campaign of Alexandre Farnesio in the 1580s had been successful. The year of 1585 was the corollary of his success with the end of Antwerp's seizure and the Spanish reappraisal of the city. According to van der Wee, the city initiated a period of slow recovery, which attracted foreign merchants to come back to the city (VAN DER WEE 1963, 277-278). In fact, in Ruiz's company documents, one could not find any agents placed in Cologne, Middelburg, Calais and other surrounding cities. Those who had escaped to such places, as the Portuguese Fernão Ximenes, appear now acting directly from the Scheldt port. Spanish merchants were the most hit by Antwerp's fury against the Spanish government, but figures like Diego and Gaspar de la Pena, Alonso Camarena, Antonio de Cuellar saw in Antwerp a calculated risk to settle their activity. Diego and Gaspar de la Pena are some of the most frequent takers used in Antwerp to send money to Simon Ruiz and his favorite Castilian financial centers. They were intermediating this continuous relationship between some Portuguese agents, like Manuel Henriques, Manuel Rodrigues Ximenes or Rodrigo da Veiga de Évora.

Antonio and Bernardo de Cuellar participated less in the network activity, but also performed the same functions. It seems that Castilians in Antwerp mediated the relationships between the Portuguese and Simon Ruiz. Would the transfer system between Antwerp and Castile be easier including Castilians? It seems unquestionable that Castilians were also coming back to Antwerp and it was easier to send money through Castile to Antwerp rather than from Portugal to Antwerp. On the other hand, involving other agents reduced risk. Still, Portuguese agents were the ones transacting higher sums of money.

The alteration in the *asientos* policy by the Spanish Monarch from 1588 onwards made Antwerp financial market truly appealing, especially with the increasing amount of silver reaching Europe every year. To discourage the speculation of the *asientos* in the Genoese fairs, the Royal Hacienda imposed to all *asientistas* the condition of paying its totality directly in Antwerp, even in monthly payments (LAPEYRE 1953, 59). The place also represented a great administrative basis for commercial operations, between the Imperial South, financial centers in Italy and the Baltic, 'the trade of the Spanish, Italian, Portuguese and South Netherlandish firms with the rebellious regions and also with England and North Germany was organized from Antwerp not only administratively but also financially (VAN DER WEE 1963, 281-282).'

If the position of Castilians were maintained in Nantes and Rouen, a new route for Simon Ruiz's company, already initiated in the end of 1570s, was reinforced – the Mediterranean axe. Castilians were then present in Florence, but also in Rome in a significant number. Besides being a gateway for Spanish wool and Indian crimson, Florence was also a financial centre in direct relation with Lyon (where Tuscan bankers, as the Bonvisi, were settled) and Besançon or

Piacence, with exchange rates coordinated with those financial places (RUIZ MARTIN 1965, XCII). Baltasar Suarez continued to be the favourite partner of Simon Ruiz in this enterprise, but other Castilians interacted frequently in this matter. After 1583, his son Camilo Suarez also intervened in this business in partnership with Antonio and Diego de Valderrama. Diego Gutierrez, trading in Florence, had also business with Ruiz as he participated in exchanging as a donor and Ruiz as beneficiary in Castile⁹⁵. Juan de Lago, a well known Castilian merchant at the time, participated frequently in the transfers between Medina del Campo and Florence performing financial roles as taker or payer of Baltasar Suarez⁹⁶. He also directly reported to Simon Ruiz, as the correspondence translated by Ruiz Martin shows (RUIZ MARTIN 1965).

In this sense, placed in Florence, Castilians believe they would be less dependent from the Genoese than in other periods. The Genoese were the great creditors of the monarchy, and with this strategy, Castilians would be less exposed to the risk of a new bankruptcy. The axe between Medina del Campo and Florence was also relevant for the Portuguese pepper exports to Italy, not only to Florence but mostly to Venice. Baltasar Suarez, for instance, had businesses there. And Portugal did not have direct exchange with Florence. The exchange with Italy was relevant for receiving payments in silver (the Spanish one), which was being drawn to there. Selling spices to Venice or Florence is described as usual by Vitorino Magalhães Godinho, from the third quarter of the sixteenth century onwards (GODINHO 1963-1971, III, 179-183). The circulation of foreign currency was established by these Castilian transfer mechanism, first from Lisbon to Medina del Campo, then from Medina to Florence and vice versa (RUIZ MARTIN 1965, XCIX).

Rome, on the other hand, was a new opportunity. The conflicts against Protestants in which Spain and the Catholic Monarchy was involved in, during this three-year period, counted with the support of the Papacy. This help was not only in moral, political and diplomatic protection, but also involved money transfers to the Spanish monarchy. However, in certain bills of exchange in which money was transferred to or from Simon Ruiz, one can read additional comments to justify the current accounts with agents like Hieronimo de Fonseca, Constantino Manriquez, Pedro de Tovar or Cristobal de Vergara, stating motives like the bought of religious dispenses of marriages and other religious business. It seems that the trick was to chose as representatives doctors or graduate agents already settled in the Roman Court, who could not only intermediate the transfers to Spain, but also profit from dealing with expenses from religious affairs.

⁹⁵ Bill of exchange ASR-05.1589.718.

⁹⁶ Bill of exchange, f.e., ASR-05.1589.054.

Portuguese agents continued to be the second larger national group represented in this network. After 1580 and the Portuguese Crown junction with the Spanish Crown in the person of Philip II one must consider the impact of this political affair in the constitution of the network. Even if the relative growth of Portuguese agents in the network occur, it is around 6 per cent, which one believes is not particularly relevant. Portuguese already occupied a key position in Simon Ruiz network, due to their capital investments in Antwerp, fact that was maintained. The most frequent contact of Simon Ruiz was, by this time, Simão Rodrigues de Évora. He was son of Manuel Rodrigues de Évora and inherited his firm in Antwerp together with his brother Nicolau (ALMEIDA 2009, 251-252). He was connected to Ruiz in the *asientos*, and in direct exchanging currencies, acting as a donor. He worked with the main banking houses in Antwerp such as the Bonvisi, the Spínola, the Maluenda or the Balbani agencies⁹⁷. The ties with the Ximenes and Henriques persisted. Filipe Jorge and Diego Pardo, also New Christians, performed the role of Ruiz representatives, appearing regulating Simon's affairs in Flanders and setting up their current accounts (VASQUEZ PRADA s.d., I, 19)⁹⁸.

The growth of the number of Portuguese agents occurred with individuals placed in Lisbon. The predominance of identified New Christians is remarkable (50 in 95), as it was discussed in the preceding analyzed period. Surnames like Ximenes, Gomes de Elvas, Mendes, Caldera, Faleiro, Duarte, Alvares or Godines are frequent. Two of the most frequent partners in the network are the brothers Rodrigo Lopes de Évora and Lopo Rodrigues de Évora. They were brothers of Simão and Nicolau Rodrigues de Évora, placed in Antwerp. They also had familiar attachments with the Veiga de Évora. Their correspondence with Ruiz must be considered as '[...] function, d'un côté, des flux et reflux du numéraire, de l'autre des besoins des affaires marchandes, des exigencies de la politique international et aussi de la vitesse de circulations et du comportement general du marché du credit. (SILVA 1956, 6)' In the network they mostly appear as beneficiaries of Simon Ruiz⁹⁹. One can speculate that they also used Simon Ruiz to transfer money to and from Antwerp to Lisbon. When they sent money to Castile having Simon Ruiz as their beneficiaries, or as representative of Manuel da Veiga, they used as takers other important Lisbon family with tradition in trade and finance –Jerónimo Duarte Ximenes and André Ximenes¹⁰⁰. Only seldom they appeared as takers themselves, having as their payer correspondent in Castile Simon Ruiz, in transactions between foreigners established in Lisbon to non-Iberian in Castile. The surname Rodrigues de Évora may have at least an acceptable level of

⁹⁷ Bills of exchange ASR-04.1588.437, ASR-05.1589.228.

⁹⁸ Vide also ASR-05.1590.268, ASR-05.1589.581.

⁹⁹ Bill of exchange ASR-05.1590.165.

¹⁰⁰ Bill of exchange ASR-05.1590.231.

reputation. An example occurred in the 1st September 1589, when they ask Simon Ruiz to pay a letter to the Castilian banker Antonio Vasquez in Medina del Campo. The amount was sent by the Milanese pepper contractor Joan Battista Rovelasco¹⁰¹.

Other remarkable partner was Heitor Mendes (or Nasi). He was the chief of the Portuguese branch of the Nasi and represented the interests of the Dias family and he was particularly related with Atlantic trade (SILVA 1956, 25). He had businesses both in Lisbon and in Medina and he was served by Simon Ruiz to transfer amounts of money between the two places¹⁰². Some other Portuguese agents appear as partners with current accounts with Ruiz's firm in exchanging, performing both roles of takers and payers, as happened with Manuel Mendes, for example¹⁰³.

On one hand, Lisbon continued to be an exceptional port for buying and selling oriental luxury products and, besides the recovery from Levant routes from the third quarter of the sixteenth century, spices continued to be valued and demanded. Pepper and other spices contracts, and the rents of Portuguese ports Custom houses, according to Godinho, were then mostly in the hands of Portuguese merchants (GODINHO 1963-1971, III, 213). The number of ships from India were diminishing, the pepper contracted in its origin was more and more expensive, privateering and pirate's attacks after 1586 increased, pepper had inferior quality, and some part of the merchants began to be attracted by the sugar trade from Brazil¹⁰⁴ and slaves¹⁰⁵ which they were purchasing in Angola and Congo in the going trip to Portuguese America. Nevertheless, the spice trade was still in place, it was still important for the overall European trade centers and Lisbon was still the neuralgic center of reception of those products, even if the distribution centers were elsewhere, in Northern Europe.

Due to the new Atlantic trading cycle, another Portuguese location is the base of exchanging with Simon Ruiz network: Porto. This Northwestern Portuguese port and other satellite ports were one of the geographical basis for sugar trade and its transportation to Antwerp, as well as for slave trade as the works of Amândio Barros and Amélia Polónia had

¹⁰¹ Bill of exchange ASR-05.1589.641.

¹⁰² Bill of exchange ASR-05.1590.144.

¹⁰³ Bill of exchange ASR-05.1590.217.

¹⁰⁴ To confront the growing number of the sugar production and its trade implications please check (GODINHO 1963-1971, IV, 101-118), (COSTA 2001), (STRUM 2009). The importance of sugar trade in commercial affairs in Antwerp and Hamburg and its profits can be seen in (HARRELD 2003).

¹⁰⁵ 'Consideramos baixo o quantitativo de 13000 a 15000 negros que Mauro adopta para esta última data; segundo este historiador, em 30 anos, de 1570 a 1600, teriam desembarcado nos portos brasileiros uns 50000 negros, e no meio século seguinte uns 200000. Na realidade, só Angola exportava anualmente umas 4000 peças até 1587 e umas 7500 depois desta data, (...); dessa exportação, cerca de metade encaminhava-se para as Índias de castela, e cerca de umas 1000 peças iam anualmente para o entreposto de São Tomé; portanto, só de Angola deve o Brasil ter recebido mais de 52000 peças de escravos de 1570 a 1600, (...). (GODINHO 1963-1971, IV, 172)' According to Stuart Schwarz, in the period between 1550 and 1595 this commerce was free and in the hands of the individuals instead of the State. The Portuguese dominated the main slave trade ports and even the Spanish America demanded for this labor force. After the Iberian Union, the opportunity for the Portuguese to trade in the Spanish Empire legally made their profits rise (SCHWARTZ 1998, 239; STUDNICKI-GIZBERT 2007, 9-13).

demonstrated (POLONIA 2007; BARROS 2004). These agents, dealing with slave trade, had legal access, at this point, to the Castilian Indies to where they also turn their attention. In Porto, the most frequent contact in the network was Simão Vaz. He is one of New Christians in Porto (together with Diogo Pereira, Cristoval Coronel or Diogo Fernandes) serving as intermediaries between the Portuguese agents and Castilian banking. They acted as the most important links in receiving and paying trading affairs between the two worlds¹⁰⁶.

In the same way, the presence near the Spanish court or in the Medina del Campo fairs did not grow within the scope of this network in concrete. In this sense, the annexation of the Portuguese kingdom to the Spanish domain did not seem relevant in the exchange between Spanish and Portuguese agents within this network, in this particular period. What had changed was the role of Lisbon within its functioning. The *asientos* continued to flow through Lisbon, the imports of oriental spices and Brazilian sugar seems to have grown and the association of Portuguese and Spanish in the slaves' business exports to American colonies had strengthened this union (POLÓNIA 2011; VENTURA 2005).

Another novelty in the Portuguese agents' role in this network is connected with their presence in Rome. Doctor Teutonio Nunes was one of the most frequent partners of Simon Ruiz in his transactions with the Roman Court, since 1585. He almost exclusively appears as a donor of Simon Ruiz's firm, Cosme Ruiz and Lope de Arciniega. The company began to invest in French textiles but the religious troubles of the young André Ruiz¹⁰⁷ and the difficulties in circulation and in purchasing great quality product were diminishing their revenues. Gradually they oriented the activity to Italy (LAPEYRE 1955, 99). Another Portuguese diplomat performing the same role was António da Fonseca. This one was more committed in business with Simon himself. Bills of exchange were sent to Valladolid, in which it was mentioned the motive of gathering religious expenses to maintain business, when receiving payments from other Castilian agents such as Suero Arias de Villarin¹⁰⁸. Not only the participation of clergy and the Church itself in business affairs was a surprise, but also the Roman revenues to spice up financial markets dated from Medieval times, particularly in Italy (CASTILLO PINTADO 1963).

Genoese continued to be key figures in the network, representing about eleven per cent of the identified agents. Their main circuits Madrid/Medina del Campo – Antwerp – Piacenza fairs, were straightly connected with *asientos* and silver repositories. Even if one of the reasons could

¹⁰⁶ Bills of exchange ASR-05.1590.481.

¹⁰⁷ After the death of Catherine of Medicis, France entered again in a civil war. Nantes and Brianny, in general, took the Protestant side and began to persecute individuals who were linked to the former Royal power and Catholic faith. It was the case of Andrés Ruiz, who was a privileged creditor of the French crown. He was arrested several times in this period (LAPEYRE 1955, 88-89).

¹⁰⁸ Bill of exchange ASR-04.1588.298.

be that Simon Ruiz was assumed to be less vulnerable to the Genoese activity, the fact is that it was almost impossible not to be part of this financing system. Piacenza fairs were created in 1579 under the protection of the Farnese Dukes, implicitly under the protection of the Spanish king himself (MARSILIO 2000, 63-64).

'Genoese bankers raised capital at the exchange fairs , which were typical short-term credit mechanism, where foreign bills of exchange were discounted over a three-month period. The Genoese funded long-term obligations by means of short term loans which meant they were able to enforce payment to the King and at the same time successfully manage the supply of finance from a large number of easily substitutable markets, located in different states (CASTILLO 1973, 5).'

This mechanism, at least in this particular network, was almost monopolistic. The Cattaneos, the Balbanis, the Spínolas, the Saulis, the Granollashs were represented in these fairs, in Antwerp and in Castile. On the contrary, the number of Genoese agents in Seville was diminishing. With the Besançon/Piacenza fairs they could directly transfer silver to their headquarters, without physically transporting it. Studying Ruiz's «asientos», Lapeyre concluded that Simon Ruiz in this particular moment tried to combine his assets with Portuguese agents as Filipe Jorge, some Florentines as the Scorza and other Castilians, together with the Balbanis to firm a valuable contract in 1589. This contract combined efforts to get similar conditions like the ones of Agostino Spínola (acting solo and signing contracts of one million ducats) and the revenue was directly sent to Genoa (LAPEYRE 1953, 59). Operations like this forced its interveners to repeatedly send small proportions of their share of lent money in the form of bills of exchange. Privileged bankers were the Genoese. For instance, Christoval Balbani in the triennium 1588-90 was donor and had money circulating from Antwerp, Medina, Lyon and Piacenza/Bezançon¹⁰⁹. With a financing network settled in these three main spaces, this group of business men controlled alone the banking system of the late European sixteenth century credit market.

Flemish merchants were vital in Antwerp, at this stage. With the Dutch conflict, most of the foreign bankers had run away from the town for good. So the locals continued this activity, as the credit market was re flourishing in this part, as one stated above. The most important agents were Artus de Orsaghen and Martin de Varron. They were linked with other merchants in Madrid and Medina del Campo such as Thomas Wery, Jacques Goesens and Juan Boyer, being bankers of transactions from Antwerp to Simon Ruiz's firm. Their presence in Seville also diminished. One does not know if this behavior was generalized or if it is only observable in this network, which was more and more marginal towards this financial market.

¹⁰⁹ Cf. His individual biography as rp-robot-3800 in <http://timelink.fl.uc.pt/mhk/dyncoopnet/id/rp-robot-3800>.

Nicolo and Jeronimo Stela appear in Lisbon, such as some of the few German agents who were participating in the network (Lucas Walter and Herman Vermeren). This situation is naturally linked with their role in the pepper contracts (BURKHARDT 2009, 151-194; VAN DOOSSELAERE 2009; MILGROM 1990), benefiting from the engagement between Portuguese and Spanish agents in money circulation in the Peninsula and from Castilian markets to where they needed their money to go. On the contrary, they appear as punctual financing correspondents with Castilian agents, as payers in Lisbon¹¹⁰, where finding solvable takers and payers were not easy, as Antonio Gomes in 1570s described repeatedly. Other national groups were mostly unexpressive in this universe of almost one thousand agents, as the French, being, when present, particularly relevant in the French circuits of Nantes or Rouen. They reveal themselves to be in a sharp decline in the network strategy at this time. The same happened with the old paper business men in Castile, such as the Neureze.

To sum up, this period is profoundly marked by the assumed role of Simon Ruiz in the Spanish finance, an evolving trend regarding his previous investments on trade. This particular activity was in the hands of his nephew and his former employee, Lope de Arciniega. The geography of the agents is focused now in four points – the revitalized fairs of Medina together with the emergent Madrid, the Genoese monopolistic fairs of Besançon/Piacenza, Lisbon and Antwerp. The annexation of the Portuguese kingdom in 1580 did not seem to have affected the presence of Portuguese and Castilians in this network. Instead, Lisbon opened itself as a flourishing opportunity to all of the network's agents. Money circuits were then easier and the flourishing Southern Atlantic trade was attracting revenues reinvested in the European finance.

7. 1595-1597: the end of a generation

The years reported in this final period of analysis, regarding the evolution of Simon Ruiz network, is marked by the history of the firm itself. From 1592 onwards, Simon, already old and ill, decided to definitely associate his nephew to his businesses, even the financial one, creating the company «Simon y Cosme Ruiz» (LAPEYRE 1955, 73). The fact is perceived by the prevalence of Simon and Cosme as the network nodes with the greatest total degree. In fact, it is very similar. If Simon Ruiz has 94 different partners in the network, Cosme Ruiz Embito counts with 90 partners. If one considers that the total number of nodes between 1595 and 1597 was 643, it

¹¹⁰ Bill of exchange ASR-04.1588.199.

means that Simon and Cosme were only directly linked to a small relative number of partners, of about 14 per cent.

In a context of formal war between the France led by Henry IV and Spain, Philip II and his subjects continued to be preferential targets of England and the Netherlands, not only in the European Atlantic, but also near Spanish and Portuguese overseas territories. Again Philip II decided to confront England. The archduke Albert, the new governor of the Spanish Low Countries, took Calais in April 1596. Philip began to build a new Armada for a future England's invasion. Drake attacked Cadiz again and destroyed the new fleet. Philip continued his operation now centered in Lisbon. Lisbon was also in a privileged geostrategic position to launch the attack to northern Europe, but also to the Spanish Indies where Dutch and English privateering proliferated.

Even if a considerable amount of silver came to Spain in this year, Philip II decreed a new abduction of private revenues in Seville, with the condition the owners wanted to trade their silver or gold by the Hacienda «*juros*». With the measure 262.500.000 *maravedis* were collected (MARTÍN ACOSTA 1992, 191). Nevertheless, on the 29th November 1596 a new bankrupt arrived. The king canceled the debts in payment, suspended the guarantees made upon by the Hacienda and dictated the end of interests in every contracted debt (DRELICHMAN 2007; CASTILLO 1973; CASTILLO PINTADO 1963).

Looking at the yearly evolution of this concrete network, and acknowledging that Simon Ruiz was profoundly embedded in these financial operations¹¹¹, one cannot find any immediate sign of troubling in the firm activity. In fact, between 1595 and 1597 it is observed an average reduction of the number of partners in 4,7 %. But this retraction was reversed by an increase in the number of links in order of 5,8% and a tenuous growth in the average number of links per node, which was beyond 3 partners per node. The answer to this demanding situation in terms of liquidity seems to have been the focus in trustful partners, with whom the company had performed repeated trading and financial contacts. The period between 1595 and 1597 registered the greatest percentage of former partners still being active in the network.

Considering the agents with a number of links superior to 20 connections per node, who, except Simon and Cosme Ruiz, constituted a group of only 12 individuals (1.9%), only two of them were new partners in the network. One of them was Paolo Bonvisi, the first family representative of the Bonvisi in Lyon in Spain. He was acting as a beneficiary and payer in Madrid and Medina, associated with Simon and Cosme Ruiz. Benedeto Bonvisi had died and

¹¹¹ Lapeyre referred great «*asientos*» in which Simon Ruiz was involved with the Portuguese Veiga and Rodrigues de Évora (LAPEYRE 1953). In the correspondence transcribed by Gentil da Silva, received by Simon Ruiz from these families, the issue «*asientos*» is several times mentioned (SILVA 1956).

Paolo is now the new partner of Estevan, Antonio and Bernardino Bonvisi in the Iberian affairs. The revenues from the Castilian finances were of major importance, since the decay of Lyon fairs had forced the firm to exit the city and began to exchange in Piacenza, where Bernardino, Antonio and Estevan were, at this point, settled. The other new agent with significant linking was the Castilian Christoval de Aldana, with 47 connections with different agents. He had a partnership in banking with the Genoese Carlos Velutti (with a total degree of 43 links). They ensured the capital transfers between Simon and Cosme Ruiz and Portuguese partners in the *asientos*, as the Veiga and Rodrigues de Évora, the Jorges in Lisbon¹¹². In the years 1595 and 1596, Aldana participated in 458 acts.

Considering other agents with an important total degree one should report Antonio de San Roman, also placed in Lisbon and ensuring the same kind of operations with almost the same protagonists¹¹³. Juan Battista Gallo and Juan Luis de Vitoria were the best positioned agents to ensure the opposite circuit from Medina or Madrid to Lisbon, also linking Portuguese capitals to Simon Ruiz's company¹¹⁴.

These agents, linked to the biggest number of partners, performed the roles of takers and payers in numerous exchange acts. The circuit of money transfers seems to have been privileged between Castile and Lisbon. On one hand, the main partners of Simon Ruiz's *asientos* seemed to have been the Portuguese. It was important to transfer money from all partners and Lisbon did not have a direct way to send capitals to Antwerp. In such way, merchants and bankers transferred first to Medina or Madrid and from there to Antwerp. The profits of such operations should also be transferred from Medina to Portugal. On the other hand, Lisbon was the main door to reach Portuguese colonial markets, either by buying colonial products and reselling them in other European markets, or for ensuring European goods for demands of the European population overseas. In this sense, it was important to have trustful and successful agents like the ones identified to ensure these circuits.

¹¹² Bill of exchange ASR-05.1595.403.

¹¹³ Bill of exchange ASR-05.1596.118.

¹¹⁴ For example, Bill of exchange ASR-05.1595.195 or bill of exchange ASR-05.1596.125.

Fig. 13 - Simon Ruiz's network betweenness distribution, 1595-1597

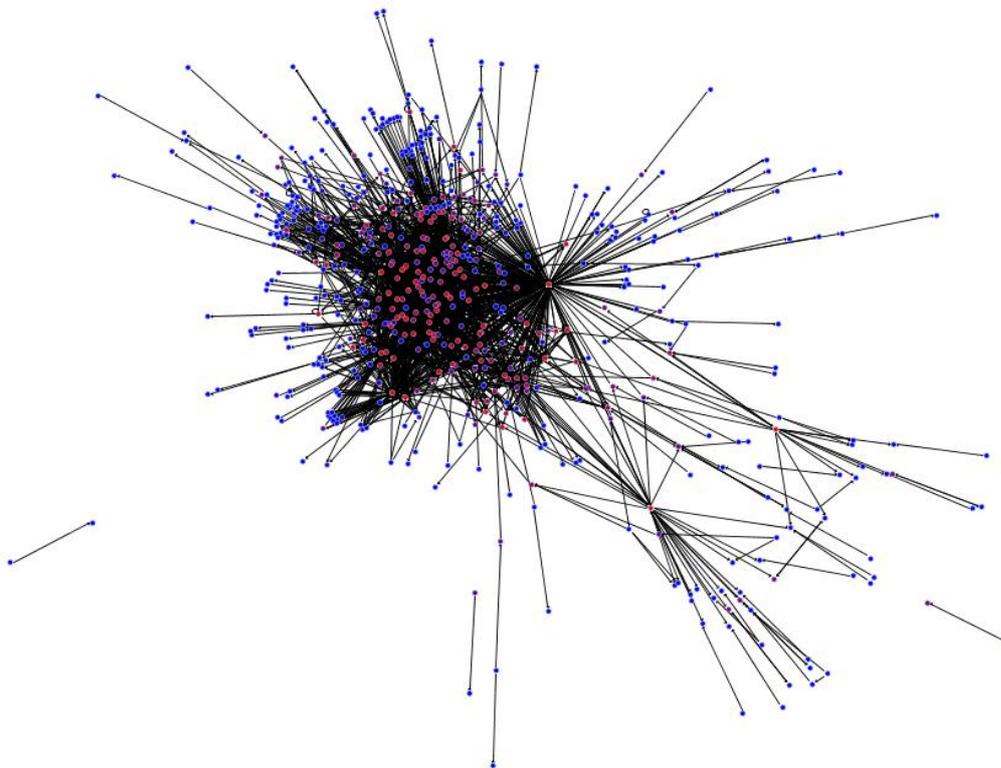
Nr of nodes: 643 % of the total nodes: 12.5%

Nr of links: 1069

Average degree – 3.33

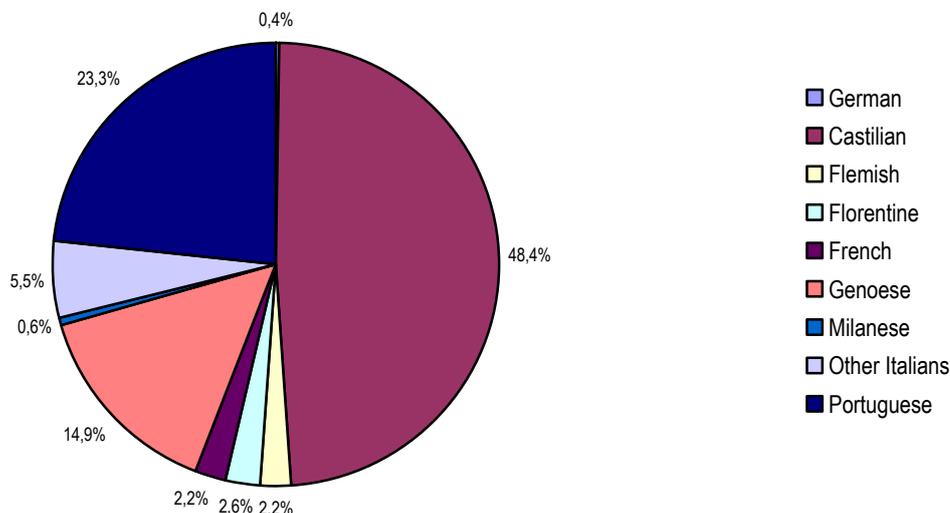
Percentage of new partners – 75.6% (486)

Percentage of old partners – 24.4 % (157)



The topology of the network is less linear than in previous period. It is still star shaped, with a great star in the middle: Simon Ruiz. He is linked with two smaller stars, centered by Teutónio Nunes and Hieronimo da Fonseca, both placed in Rome. They are crucial in the transferences to and from Rome or Castile. On the other side of the graph one can perceive a dense nebulous, with smaller stars in its ends. A network topology as such implies a stronger interaction between partners, by which the network activity and the collaboration between agents were strengthened. Regarding the importance for the network resilience, those former partners are the ones with a higher betweenness rate. If they disappear, an important part of the network would collapse.

Chart 7 - Nationalities of Simon Ruiz's partners, 1595-1597



The percentage of unknown individual nationalities for this period is 15.2% (98 cases).

The percentage of known individual nationalities for this period is 84.8% (545 cases).

Source: Bills of exchange and commercial correspondence of the Archivo Simon Ruiz.

The national profile of the agents is quite similar to those explained for the period between 1588 and 1590. There, however, a tenuous decrease in the relative weight of Portuguese agents, and simultaneously a slight growth in the number of Genoese and other Italians are identified.

Castilian agents were mostly concentrated in Medina del Campo, while we assist to a decreasing number of agents doing business in Madrid. Nevertheless, it seems likely that agents exchanging in one place should also be trading in the other, due to its geographical proximity and Madrid strategic position near the center of political power, so relevant if an agent would like to profit from business with the State. The king Philip II appears in this sample period in acts which make detailed proof of how the business of *asientos* functioned in detail. For instance, on the 26th January 1596, the Spanish king is a donor in Lisbon of 689000 *maravedis* to the Genoese Fabio Morin in Medina del Campo or to his representative Christobal Ruiz, a scrivener of the Court. In the bill of exchange it is explained that the king had debts with this Genoese and was transferring

from Lisbon the amount in debt, in form of revenues of colonial trade that should be received from the «*alcabalas*»¹¹⁵.

New relevant agents emerged in the periphery of the Portuguese borders: in Galicia (Pontevedra, Tui, Orense), Salamanca, Zamora (and Toro). These were members of the clergy: abbots from important monasteries as Pedro de Buxio, parochial priests as Juan de Gusman, canons as Diego Suarez de Eça. Even performing these functions, they appeared as payers of bills of exchange sent from Rome by the Portuguese Teutonio Nunes, who was sending money to Simon and Cosme Ruiz¹¹⁶. There are no evidences that this man was part of the Church, but he always signs as doctor, and is located in Rome. With this data it is plausible to sustain that these agents in Rome can actually be ecclesiastical, with major studies in Canonic Law, and performing services inside the Papal Court. In this particular case, this man would choose other clergymen, who he knew and trust, maybe by the proximity from their origins, maybe dislocated or not in the Spanish Court, to establish repeated financial operations and a current account.

Castilians were also fundamental for assuring the business strategies in Italy without a strong dependency from the Genoese, in Florence and in Rome, where agents were extremely relevant for the functioning of the network, as we have seen above.

¹¹⁵ Bill of exchange ASR-05.1596.093.

¹¹⁶ One example is the bill of exchange ASR-08.1597.322.

Table 12 – Places of action of Simon Ruiz partners according to nationalities, 1595-1597.

	Ant werp	Barc elon al/ Vale ncia	Besançon/Piacen za	Bil ba u	Br az il	Bu rg os	Flor enc e	Ge no a	Lis bon	L y on	M ad rid	Me din a del Ca mp o	Na nte s	P or to	R o m e	Sar ago za	Se vill e	To led o	Vall adol id	Spa nish territ ory es near the Port ugue se bord er	Othe r Port ugue se plac es	Oth er Sp ani sh plac es
Cas tilia n	13	3	3	8		5	11		6		20	92	2	2	17	3	10	3	5	23	1	13
Fle mis h	6			1								2					1					1
Fre nch	1									4		2	5									
Ge noe se	18	1	25				2	3	1	4	6	16					1					
Ger ma n			2																			
Mila nes e	1		2																			
Port u gue se	19		1	1	1		1		53		10	7	1	8	14					1	4	
Tus can s			6				5			2					1							
Oth er Itali ans	6		11		1		1		1	1	1	4					1					
Tot al	64	4	50	10	2	5	20	3	61	1 1	37	12 3	8	1 0	32	3	13	3	5	24	5	14

The percentage of unknown individual nationalities for this period is 21.2% (136 cases).

The percentage of known individual nationalities for this period is 78.8% (507 cases).

Source: Bills of exchange and commercial correspondence of the Archivo Simon Ruiz.

By confronting the graph with the data in the table above, it is noticeable a certain continuity in the business strategy of the network. Apart from Medina del Campo, center of the financial activity in the Peninsula, the main local axis for money transfers are Lisbon, Antwerp and the Piacenza/Besançon fairs. The number of agents placed in Lyon drops to a residual number, as well as other French places as Nantes. In fact, Rouen's and Paris agents disappeared. By one hand, the opportunity of transferring money to Antwerp was now more dependent from the Italian centers to where not only *asientistas* sent money, but also private credit knew its central European market. On the other hand, the Franco-Spanish animosity and conflict made things

more difficult for the Spanish and foreign affairs in France. For instance, the Bonvisi firm closed in Lyon in 1594 and relocated its activity to the Genoese fairs. Both in Lyon and Nantes, almost all agents were, by this time, French, on the contrary of what happened in the past. The acts in which Juan Pollain participated are related with French textiles trade which entered Spain by Bilbao. In exchange, the payment from the Ruiz company went through this Cantabria port and center of small amount of exchanges¹¹⁷. The French agents in Lyon appear very seldom, in acts between French individuals, in a money circuit from Lyon to Madrid¹¹⁸.

The importance of Portuguese agents in Antwerp was then compromised by the growing number of Genoese partners in that region, as Agostino Franchi, Jacome Doria or Giovan Battista Sauli. Instead of being the Portuguese to act as donors and takers in the same bill of exchange, sometimes frequently adjusting current accounts with the mechanisms of «cambio seco», the Genoese are now the favorite bankers to intermediate this process. Usually the Genoese act also as payers in Medina del Campo, or delegate such task in other relevant Castilian bankers. Genoese bankers seem to have been much more competitive in exchange affairs. On the 12th September 1595, to send 1000 ducats to Manuel da Veiga and his representatives, Nicolau Rodrigues de Évora chose Giano Sauli and Giovan Battista Sauli to transfer them. On their turn, these Genoese choose in Castile Nicolao de Fornari Mateo to pay it¹¹⁹. Even if the silver fleet was delayed in 1594 and 1595 and the high price of grain brought a new narrowness in the Antwerp credit market liquidity, the exchange market was quite attractive, not only because of the concentration of Spanish money, but mostly due to the ‘abundance of inferior French and North Netherland’s specie, in which Antwerp again played a role (VAN DER WEE 1963, II, 282).’

Lisbon became the third center in the network, very much controlled by the New Christian Portuguese agents, who were crucial for applying their investments in the Spanish public debt, and for their special contacts with Northern European centers, as Antwerp. Lisbon was at the crossroad of intercontinental traffic, a commercial center with wide consumption markets in the horizon, an Iberian city, an external balcony to the economic collapse of the Castilian unity.

‘El capital judío-portugués, en los días finales de 1596 e iniciales de 1597, a través de los vínculos de familia y de raza que ha mantenido con el mundo norteño, desde los Países Bajos, que le servía de etapa estratégica, tanto para acceder a la zona católica como a la zona protestante, sin jamás perder contacto con las Indias Orientales y las Indias Occidentales, se había

¹¹⁷ Bill of exchange ASR-05.1596.274.

¹¹⁸ Bill of exchange ASR-05.1596.039.

¹¹⁹ Bill of exchange ASR-05.1595.547.

potencializado en el último tercio del siglo XVI, al preservarse inmune, de añadidura, de las tentaciones que emanaban de las ferias de Piacenza, (...) (RUIZ MARTIN 1968, 164).⁷

Portuguese acted mostly as beneficiary and donors in the Lisbon and Madrid credit market. Even so, there were some exceptions, especially after 1597, where the Portuguese capitalists began to settle in Madrid, due to their preference in the *asientos* affairs. One of these agents was Pedro Gomes Reinel. He was a slave trader both in Portuguese and Spanish America¹²⁰. He appears in this network in 1589 based in Madrid, as a debtor of the Genoese Bernardino Granollach. His continuous collaboration with Simon and Cosme Ruiz appears after 1595. His role in the network is related with money transfers to and from Lisbon to Madrid, either wherever Simon and Cosme are donors or beneficiaries, or when intermediating acts between Portuguese agents in both places. He is related with Simão Rodrigues de Évora, Manuel da Veiga, Lopo Rodrigues de Évora and Manuel Ximenes¹²¹.

Brazil directly appears in the network as a space for business, which sustains the tendency, stimulated in the late eighties, to create business' synergies with agents dealing with sugar and slave trade in the Americas, which agents, not only in Lisbon, but also in Porto continued to ensure. It was the case of Diogo Fernandes, beneficiary of Simon Ruiz in a sugar cargo¹²².

Genoese agents were completely determined to assure their financial health avoiding risks implied in borrowing money to Spain. Their number of agents in Madrid, Medina and Seville were diminishing. They focused their activity in Piacenza banking system, coordinating credit with Europe, between the North and the South of the continent.

This final period in Simon Ruiz activity showed a strategy of continuity in financial affairs. Former partners in certain economic centers in France were now almost exclusively delegated to a marginal position in the network. Lisbon, Antwerp and Italy were the triumvirate for Ruiz's firm activity in the credit market. Agents which were well placed in Antwerp, Rome, Florence and Piacenza profited in intermediating money transfers, imposed by the fact of being an *asientista* imposed. On the other hand, even if directly cooperating with Portuguese agents in trade and in finance, Ruiz offered his services to mediate financial contacts with the principal financial and money centers in Europe. Those were essential for facilitate liquidity of the Portuguese firms which were applying their revenues in exchange for Spanish silver. 'C'est presque toute l'Europe

¹²⁰ A search in the national Spanish Archive website for 'asientos de negros' will conduct to affairs in which his name appears.

¹²¹ Vide for instance bills of exchange ASR-08.1597.126, ASR-08.1597.383.

¹²² Bill of exchange ASR-05.1596.313.

que les Ruiz, transporteurs de credits offrent ainsi à leurs clients. Une Europe marchande don't ils on tune longue experience bien à jour. (SILVA 1956, 24)'.

The Ruiz firm invests, in this period, in continuity to the previous decade, in two complementary financial and commercial systems: the Genoese and the Portuguese. Gentil da Silva explains this situation clearly:

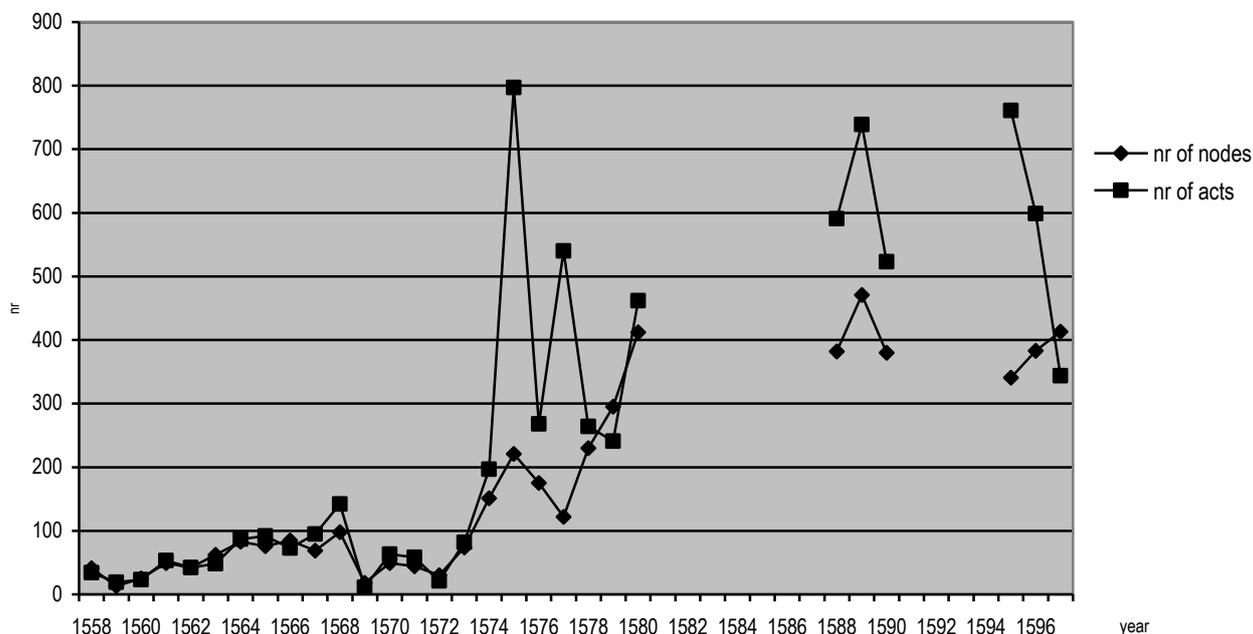
'Il y a loin de la merchandise à la finance, d'une part. D'autre part Gênes est la capital d'un système qui englobe l'Espagne, une partie de l'Europe, la Méditerranée – un système qui s'apuie sur une certain redistribution de l'argent américain arrive à Seville. Au contraire, les Portugais sont lies à la vie marchande de l'Atlantique et des mers orientales (SILVA 1956, 11).'

Cooperating with both of these systems, Simon distributed the risks of a Spanish financial disruption, which would inflict severe damages in the Genoese exchanging system and ensured business with Antwerp, financing it with the revenues of colonial trade, in partnerships with the Portuguese.

Simon Ruiz died in 1597 and his name disappeared from the network, even if the company still persisted until 1606 in the hands of Cosme. One chooses to end this analysis in this point, because the intention was to focus in this personal centralized network. Yet some questions will be answered in a future research regarding the resilience of merchant networks in the hands of his heritors. Were the previous partners maintained in the hands of the heritors? Would the former partners trust the new firm manager as an extension of the trust deposited in the first associate? Will the new key-businessmen be able to adapt the inherited network, itself transformed overtime, to the new political, financial and economic circumstances?

In a summary approach to the evolutionary profile of Simon Ruiz network some final remarks should be put forward. Simon Ruiz's network, in the first years of his autonomous activity in business, began with few partners. This scenery of gradual and slow growth of the network was maintained until 1568-1569. In the first half of the 1570s the tendency was for instability, reflected in lower levels of partners and activity. After 1574, the network clearly expands and besides some conjunctural disturbances, it never goes back to previous number of nodes. After 1580 it reaches a number of nodes between 300 and 400, with the exception of 1589, when the number of agents in the network exceeds 450 members.

Chart 8 - Comparative evolution of the number of acts and the number of network nodes per year, 1558-1597



Source: Bills of exchange and commercial correspondence of the Archivo Simon Ruiz.

Comparing the evolution of the number of nodes with the number of acts in which the network agents were involved in, one can understand that until 1573 the number of acts and the number of nodes evolved similarly. This was a time when the firm was deeply embedded in trade. Considering that Simon Ruiz would participate almost in every act and considering that, referring to the bills of exchange, in each act other three individuals (or more) would participate as well, one should conclude that, at least yearly, some agents would participate repeatedly in the network activity. After 1574, the network witnessed a growth boom and began to be more and more dependent of financial businesses. The number of acts reached, in 1575, the 800, while the number of partners did not grow in the same scale. This tendency was kept until the end of Simon Ruiz's life. It seems that the bet in banking and public loans had inforced the expansion of the network, but not in the same scale as the number if trade or financial acts registered. Besides the fact that the type of business in which Simon Ruiz was involved in, the financial ones and the *asientos* were riskier. The amounts invested in the activity were equally bigger and meant the danger of bigger loses. Diversifying the partner's network should help to minimize the risks. According to some management specialists, using this strategy a firm acquires a set of unique information which helps taking decisions on the firm level and reduces the level of trust that one

should deposit in a few number of agents. The firm becomes less dependent from individual agents (BECKMAN 2004). At the same time, the predominant type of activity within the network seems to determine the frequency of contacts with strategic partners.

In the same way, the evolution of graphs and individual connectivity has demonstrated that, until 1574, Simon Ruiz was almost directly linked to all individuals within the network. As the number of agents within it grew exponentially, other individuals emerged with significant total degrees. They were not only firm's employees or kin associated to the business but were, in fact, other partners that constituted their smaller sub-graphs, because they were performing relevant functions within the network or intermediating transactions between agents with a strong relation to other agents, and intermediating transactions in an important business axe. In this scenario of a larger network, Ruiz is more dependent on these agents. This point can be perceived by the difference between his total degree and the total number of partners.

The evolution and predominant business strategy of the network is profoundly dependent on political, military, economic and financial exogenous events. Margrit Schulte-Beerbuhl also invokes this explanation in order to explain the expansion and failure of German commercial houses in London (COSTA 2002, 307-384). Retracing those events which marked each analyzed period and regarding the evolution of the number of acts in the network, a correlation between those facts becomes obvious. Unstable periods, as the bankruptcies of 1575-1576 and 1596-07, generated a trendy instability in the network activity. In those periods, the number of partners was also disturbed. And the network agents' behaviors in those periods were different. In the period between 1575 and 1577, the number of nodes faced a continuous decreasing tendency. While in 1596 and 1597, regarding the same contraction in the network activity, the number of partner raised. This differential behavior is obviously related with the network's resilience to the crisis itself. In the first period, the firm's past activity were not profoundly embedded in financial affairs. The network structure, based in trading partners, had proved to be resistant to trade fluctuations and did not suffer extremely with the financial crisis. The answer of reducing the number of partners is marked not by the firm's health, but by an external market uncertainty. It was the reason for reinforcing existing relationships for which there was already record of their quality. One can understand that, since 'organizations seek stability and trust in interpartner relationship (BECKMAN 2004, 262)'. Even so, in the overall period the network knew a great expansion in the number of partners.

Instead, in 1595-97, the causes of the crisis directly derived from business activity in which the network was implicated, like the Spanish public debt. The reduction of the number of partners was not punctual, as in 1575, but it was a tendency from 1590 onwards. One should not

be surprised that when the levels of activity decreased significantly. The number of older partners was bigger (periods of 1569-1573 and 1595-1597). When the network was living prosperous moments the number of older partners significantly decreased, in a relative proportion with the new comers. The evolution of the network depended strongly from endogenous strategies, as well as from the exogenous dynamics which conditioned the partners' choice.

In this second half of the sixteenth century, this specific network knew punctual contractions in the network size. The general trend was growth. If an agent like Simon Ruiz was a privileged part in this network construction, his number of direct partners also tend to grow. The number of future partners increased with the number of connections he already had. This is what is called «preferential attachment» (NEWMAN 2010, 487-490).

Thus, we can try to make an initial assessment regarding criteria in partner choice and the reasons for their inclusion and exclusion in this business network.

1. There is a great variety of agents included in and excluded from the network, both an active dynamics of the network and the rationality beyond these tendencies. That rationality depends on the strategies of the agents involved, always looking for the best possible combination to achieve the expansion of his business and profits. In this sense, the historical situation (political, economic and military) even if external to the actual operation of the network, appears to be crucial in the choices on place. There is a preference for short term business strategies. Clé Lesger reached the same conclusion studying the circulation of information in the Amsterdam merchants in the sixteenth and seventeenth centuries: 'The wide fluctuation of supply and demand meant that early modern merchants had to run their businesses as a series of ad hoc decisions and temporary associations with other merchants (LESGER 2006, 226).'
2. The presence of certain individuals in certain places, where the business seemed to ensure maximum benefit, is a key factor in the inclusion of agents in the network. One could recall the role of Portuguese New Christians in Antwerp or the Tuscans in Lyon.
3. The nationality of the individuals seems to be important to the choice. Not so much by the origin of the agent itself, but by the reputation of the financial health of the group, and trade and financial opportunities they represent. After the bankruptcy of 1575, the Portuguese António Gomes asked Simon Ruiz about the financial health of the Genoese *asientistas* since ran through Lisbon the news that "*os negócios do genoveses*

*interessados andam mal*¹²³. So, several crises meant a turning point in the partner choice criteria of Simon Ruiz.

4. Through this detailed analysis, partners' choice becomes clearly strategic within the firm's evolution. It seems to be both the pursuit for greater stability and for greater profits that determines, in each moment, whose partners integrate or exclude. In the early stage of this network, partners indeed were favored by the similarity of business interests in which Simon started, even before he began to have his own company. His previous boss Yvon Rocaz became his partner. Still this was a similarity of interests and not a similarity in social capital and social attributes. They gave more guarantees of a prosperous cooperation than others, as the previous chapter will prove.

¹²³ Letter sent from António Gomes to Simon Ruiz on the 14th May 1576. ASR-034.1576.015.

III. Mechanisms of cooperation

This great chapter is composed by three smaller ones, whose aim is to comprehend what were the strategies and mechanisms used in Simon Ruiz network to establish and sustain cooperation within business partners. First, we check how kin, confessional and national endogamy conditioned the choice of cooperative partners. Secondly, we observe what mechanisms of cooperation were used in certain types of cooperative relations and how cooperative dynamics evolved between beneficial cooperation and competition. Finally, we try to define how trust and reputation conditioned cooperation between business agents of the sixteenth century.

1. Endogamic connections within Simon Ruiz network

1.1. Kin endogamy: the case of Ruiz family

According to some of the main trends of national and international historiography, associations of commercial agents were consolidated within the family or relatives. These ties were seen as synonymous of trust, since family members were placed in key positions of agency or representation in the main commercial and financial points, according to the business strategy of a particular house. The example of the wool merchants from Burgos, in the fifteenth and sixteenth centuries, a case study to Constance Jonas Mathers leads the author to state that '[...] international trade was often conducted by family partnership (MATHERS 1988, 367)'. That seems to be also the case for the Italian merchants operating in Lisbon in sixteenth and seventeenth centuries, as claims Nunziatella Alessandrini. Through life histories of Florentine, Milanese or Genoese merchants, the author presents a framework of commercial relations based in the family unit (ALESSANDRINI 2009). One can also discuss the internal family endogamy, in terms of business organization, as typical of the Portuguese and Spanish Sephardic merchants, according to statements repeated decade after decade in historiographical narratives (SILVA 1959; SILVA 1956). Even in the last decade, some scholars' works subscribe the fact that family relations were crucial to the sustainability of trade during the Early Modern period, as the case of the Portuguese based in Antwerp studied by Florbela Veiga Frade seems to prove: 'A família e

a casa comercial eram duas faces da mesma realidade em que a economia familiar se transpôs para o exterior [...] (FRADE 2006, 367).’ Studies in merchant communities in medieval Genoa have pointed out as well that family and friends were almost taken for granted as potential partners in business (DAHL 1998, 274).

Also the theoretical literature on cooperation, particularly in biology, has been heightening the importance of these relationships in a family set up of cooperative relations, identifying this mechanism as 'kin selection'. The expression requires that cooperation partners are selected for shared genetic, i.e., it presumes that the existence of blood ties promotes cooperation (NOWAK 2006, 1561):

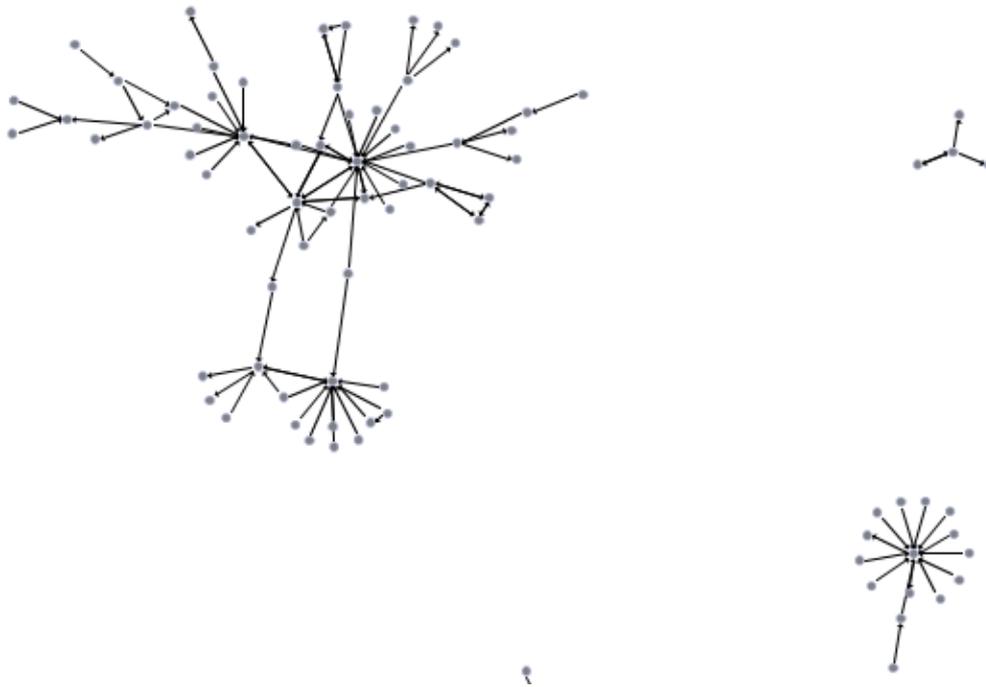
“[...] when individuals have equal access to kin and non-kin, those who choose kin as partners obtain a fitness bonus. Because the fitness bonus is obtained reciprocally between kin, kin partners are mutually dependent on two accounts: (i) to obtain the direct benefits of cooperation and (ii) to obtain its indirect benefits, which dictates their cooperating together. By comparison, non-kin are mutually dependent only to obtain B; they would not lose any fitness bonus by defecting. For this reason, kin would constitute more reliable partners compared to non-kin, and kin partnerships would be more stable as a result (CHAPAIS 2006, 49).”

In this case study, the concept of “kin selection” will be extended, including links which integrate elements of extended kindred, mostly due to marriages.

The goal of this chapter is to verify and to measure the importance of family alliances in the formation and evolution of Simon Ruiz business network. Did individuals linked by family ties interact in more decisive acts of the network life cycle, increasing the benefit of the other players involved and improving network performance? The presentation of empirical results in this chapter will concentrate therefore on the question: would most part of Ruiz business network be based on family connections and on kin selection?

In the previous chapter, one talked little about the role of family ties in the formation and maintenance of the business network. At a first glance, this kind of links did not seem to have a particularly relevant role. In the overall network portrait, family ties involve 8,2 per cent of all the partners who participated in Simon Ruiz network. This number includes not only business relationships within the Ruiz family, but also all the explicit blood ties across the overall 4180 nodes. However, the fact of dealing with Ruiz’s firm data sources only enable us to weight the role of family members within Ruiz family, since we have the complete picture of this familiar background, what we cannot have for sure in the other cases.

Fig. 14 - Family ties in Simon Ruiz business network, 1553-1597.



In the figure above, it is represented a zoom containing the two main clusters of family relations with the agents participating in the network. The bigger and denser graph on the left represents family relations among the Portuguese New Christians Gomes de Elvas, and on the right, a smaller star-shaped graph, represents Ruiz family members. Was the ethno religious affiliation a variable which could interfere in the weight of relatives within a network? Braudel already mentioned how trading minorities had a marked endogamy character. He sustained that they had a natural tendency to cohesion, mutual help and self-defense (BRAUDEL 1985, 144). The idea is also consolidated on Aslanian's research of Armenian trading networks of the Early Modern period (ASLANIAN 2006, 390).

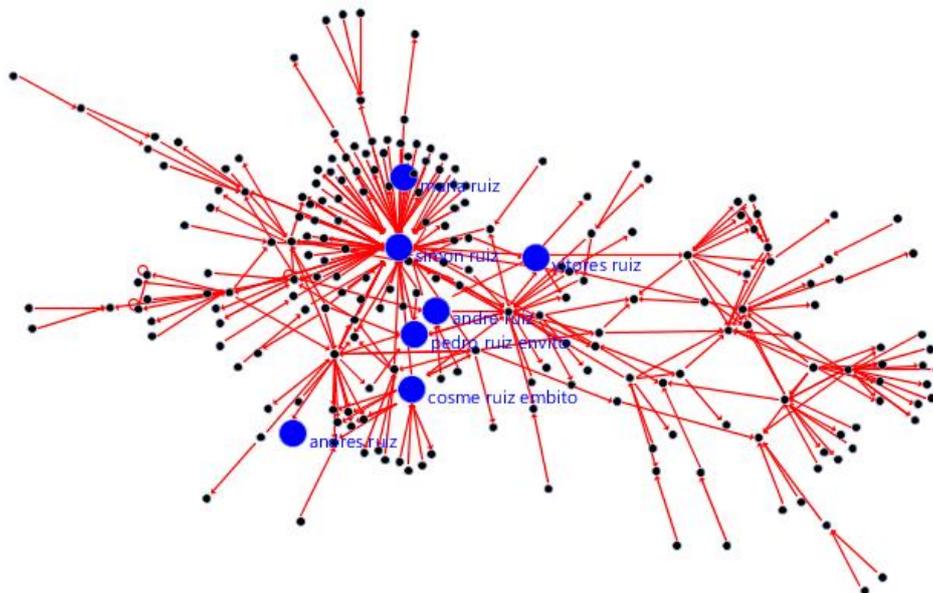
Florbela Veiga Frade, in the analysis of the economic role of the Sephardic Jews in Antwerp, defends that individuals of the same family were the principal agency's elements in different key locations in each distinct business network. Trade and financial confidence depended heavily on the family connection (FRADE 2006). Daniel Strum also investigating trust, in business networks which dealt with Brazilian sugar, detained, in most cases, by New Christians, reaches a similar conclusion (STRUM 2009). Regarding the Echevarris of Bilbao, partners of Simon Ruiz and apparently old Christians, Jean-Claude Priotti enhances the fact that this family had adopted an introverted strategy, since they

did not chose family members to establish their business agencies in different commercial centers (PRIOTTI 2004, 196). Roitman reaches the same conclusion:

'this permeability was aided by the complex identity of the elite Sephardic merchants themselves, many of whom were as much (or more) Iberian, trans-national, and mercantile-oriented than Jewish, and were not noticeably different in appearance or, in many ways, behavior from non-Sephardic Iberian merchants in the Netherlands (ROITMAN 2008, 257).'

Would the status or financial dimension of the main merchant in a network determine the closeness or openness of a trading network? The quantification of empirical data had previously driven us to a preliminary conclusion, according to which family relationships were present and had their certain role. But what was the relative importance of Ruiz family members in the operation of the network?

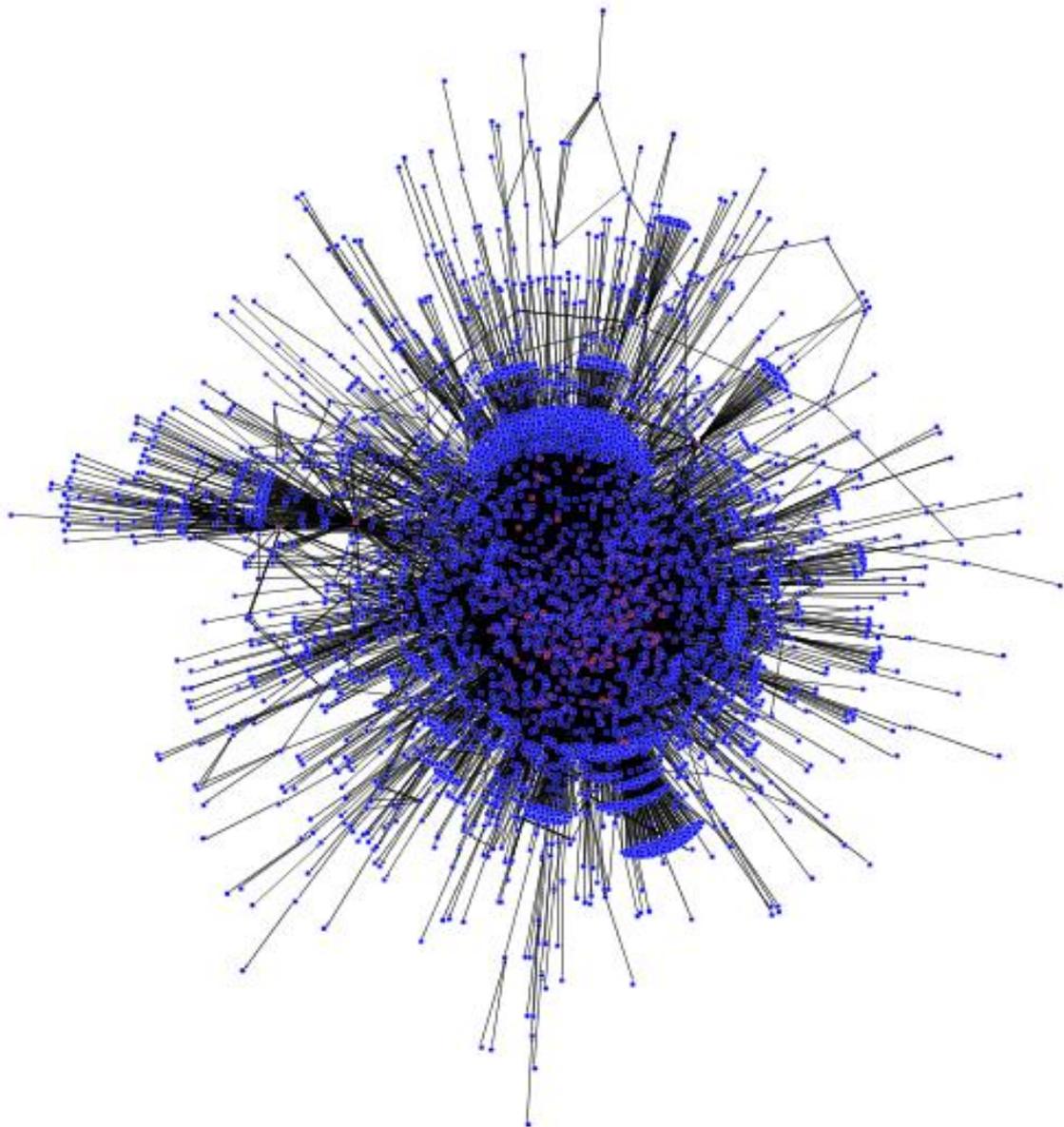
Figure 15 - Trust relations (red lines) and family relations of Simon Ruiz (blue nodes), 1553-1597



Heeding the graph in figure 15, there seems unquestionable the existence of intense trust connections between Simon Ruiz, his brothers Vitores, Maria and Andres, and his nephews Pero, Andres and Cosme Ruiz. On our network, Simon administrated Maria's heritage, his brother Andre was his representative in Nantes, position which would persist with his son. Vitores had a partnership with the brother in colonial products trade. However, most part of Simon Ruiz business representations relied on external members of the family, as we have seen and empirically proved in the previous chapter.

However, in this sample we find that family did not hold exclusively the main positions in the network. Simon Ruiz's relatives represent only 2,14 per cent of the 327 most frequent partners in his network. If we take the intensity of connections as sign of trust and trustfully relations, in the majority of relationships related to representation in business, family options were not the most determinant factor, as it will be deeply demonstrated in chapter 4. Francesca Trivellato concerning trust relations of the Sephardim merchants in Livorno and their relations with some Hindu merchants in the East reaches a similar conclusion. These men chose not placing an agent of its own in Goa, before relying on indigenus merchants this mission (TRIVELLATO 2009). Simon administrated Maria's heritage, his brother Andre was his representative in Nantes, position which would persist with in his son's hands. Vitores had a partnership with the brother in colonial products trade.

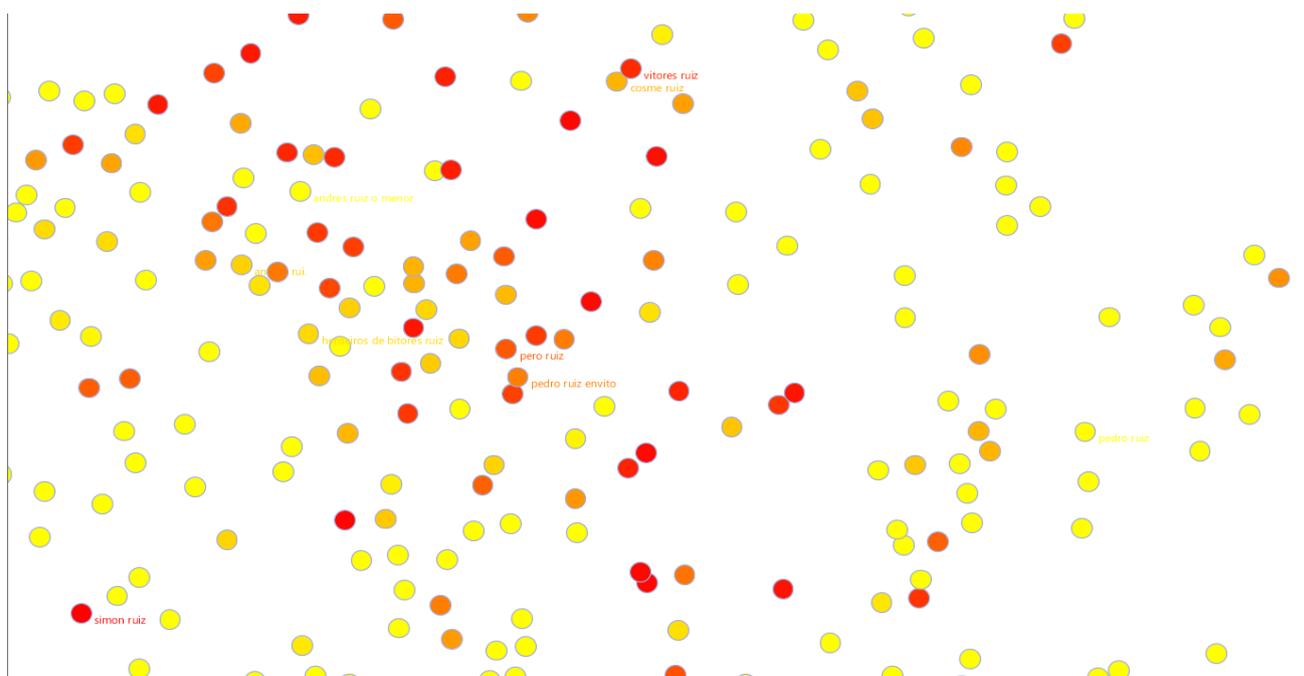
Fig. 16 – Degree Distribution Rank in the business network of Simon Ruiz, 1553-1597.



The Degree Distribution rank in network analysis provides an average connectivity of each node in relation to other actors in the graph, organizing a hierarchy. The red nodes show the distribution which have a higher degree of connectivity in the network (they have a greater connectivity, showing poles of attraction more profitable for the agents) while the blue show a lower connectivity. Did Simon Ruiz's family members represent the most attractive partners in the network? Data shows the opposite. In fact, those with a higher average of connectivity in

the network did not belong to the Ruiz family. They are merchants with key positions, both geographically, and in terms of relationships provided by their personal network of contacts. It was the case of the Bonvisi bankers of Lyon in two different generations (first, the inheritors of Antonio and Ludovico Bonvisi, then Benedetto and Bernardino Bonvisi), of Simão Rodrigues de Évora, settled by this time in Antwerp, of Fernando Morales and Antonio Gomes de Elvas, both of them Simon Ruiz's collaborators in Lisbon. Even within the firm structure, the Company involved partnerships with non-relatives employees, like Lope de Arciniega and Francisco de Bobadilla. With all these agents, Simon Ruiz maintained numerous contacts throughout the network and conceded them key-roles in his trade and financial activity.

Fig. 17 - Betweenness and the Ruiz family in the business network of Simon Ruiz, 1553-1580.

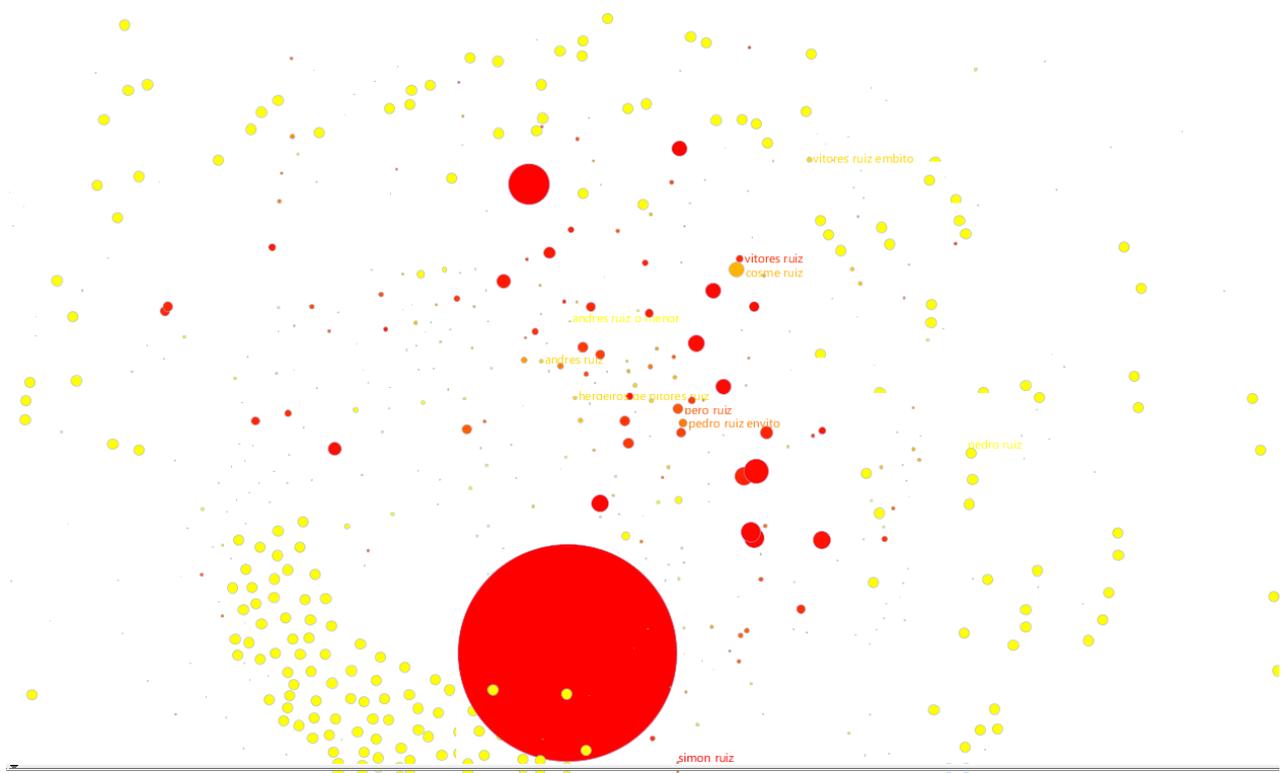


The statistical measurements of betweenness show the importance of individuals in the network, calculating the impact of their presence. In other words, it checks how many nodes are disconnected from the network if we remove a particular individual in the graph. This measure stems from the structural holes theory of Burt. This author has argued in the 1990s, that a player is in an advantageous position when he is able to establish contacts between those which do not have a connection with each other. In situations of competition or conflict, the structural holes in the internal network are harmful, since they represent failures in

the international cooperation that could be exploited by opponents outside the network (BURT 1992). Therefore, the connection between these individuals should be ensured.

In the figure above, nodes representing members of the Ruiz family are identified onomastically. Nodes' colors represent the grade of importance of individuals in the network. Red represents individuals with a higher betweenness, and yellow shows those with a lower betweenness. According to this representation, only the older brother of Simon, Vitores, appears as performing an important cooperative role in the contacts he could offer to other neighbors. However, we should note that the relationship between the brothers at the business level is assumed only in the 1560's. This partnership was not formed in the beginning of the network activity, appearing as a strategy to promote the expansion of business partners. He was not vital in the initial network setup. The other brother, Andre, and the nephews Pero and Cosme seem to have only a medium importance in the functioning of the network, not playing central roles in its development, as opposed to individuals as the Bonvisi, Geronimo de Valladolid, Antonio Gomes, Simão Rodrigues de Évora or André Ximenes.

Fig. 18 - Betweenness and total degree in relation with the family Ruiz, 1553-1597.



Assessing the total number of contacts of each individual (represented by the nodes size), compared with the measure of centrality importance that each agent plays in

the network, we can measure how Simon Ruiz's family members could be used to expand his business. One must, reiterate that the high disparity in the number of contacts that Simon Ruiz has in relation to all other nodes is due to the fact that the information collected is originated by the documentation of his own company, in which he participated in (almost) all actions. Since the total degree is a measure which accumulates the number of relationships that originate at node x and the number of relationships which target the same node, it is not surprising that Simon Ruiz has a total degree of 1205, and an average connectivity of about 180 different nodes.

Comparing the total degree of the individuals in his family, those with a more frequent activity with other nodes are: his heir, Cosme Ruiz Embito (219)¹²⁴, Pero Ruiz (35), Vitores Ruiz (27), Andre Ruiz (26). Considering these numbers in a relative proportion, one can observe the individuals who hold a higher total degree, and we find a correspondence with individuals who also knew a higher betweenness, such as the successive generations of the Bonvisi, Francisco de Bobadilla, Francisco de Maluenda, Baltazar Suarez and Lope de Arciniega. However, on the family level, Vitores Ruiz is a key element in terms of access to the largest capital in the hands of Castile and Seville merchants, as the Curiel, Juan Ortega de la Torre or the Maluenda. Still, the collaboration with his brother Simon was not the most frequent. Between 1560 and 1566, the verifiable contacts between them occurred 85 times, an average of 12 times per year. Andre and Pero were even less strategically relevant, playing an intermediary role in sales and payments on behalf of Simon. An overlook to the normalized biggest values in exchange acts make perceptible as well that none of these transactions directly involved members of Ruiz's family.

Thus, family relationships did not played an absolutely crucial role in the formation and expansion of this business network, supporting Granovetter's theory that the family, the "strong ties", appears as a basic support of economic activity. However, it was within "weak ties" (acquaintances, connections with whom we have less emotional intimacy) that arose more and better business opportunities. They served to build bridges between sets of local actors who become isolated, and establish connections, reducing the cost in linking distant nodes in shorter paths (GRANOVETTER 2005). On the other hand, opposing the empirical observations of Evolutionary Biology, it seems that cooperation is not established initially within individuals with genetic blood ties (KOKKO 2001). Nevertheless these family links occupied a decisive role in a first period of the network expansion, although the group was massively

¹²⁴ This high total degree is ensured by Cosme's massive participation in the firm's business acts after 1585, when he was formally an active partner in the firm.

later extended to non-relatives. The case study of Simon Ruiz network does not corroborate totally the theory of «group augmentation», as explained in Chapter 1. The network, and its initial core, knew the permanent need to enlarge its activity, but, opposing assumptions of that theory, the enlargement paradigm was not based in continuously cooperating with old partners and the initial partners only included one relative of Simon.

Would this process be an exception in the European sixteenth century? The lack of studies with the same base of empirical support and methodology does not allow, so far, gathering answers for this question. Even so, the representatives of seventeenth century Amsterdam Sephardic Jews in places like Antwerp and Brazil were not neither kin, neither Sephardic merchants, according to Roitman. A high level of exogamic connections seemed to be essential to the consolidation of business (ROITMAN 2008, 258).

1.2. Confessional endogamy

Contrary to some historiographic standings (FRADE 2006), religious affiliation does not seem to present itself as a determining factor in the partners' choice. Rather, the profusion of new Christian agents in the network, particularly after 1570's, seems to be circumstantial, resulting from an individual's analysis of the cooperative potential with those particular agents and the opportunities they meant in the business world.

In the Introduction we have already explained how difficult it is to understand the confessional background of the Ruiz family. Castilian historiography does not seem to consider Simon as a *converso*. Ruiz family and other merchants from Burgos region, like the Maluenda, Astudillo, Vitoria, Curiel, Polanco, Salamanca, Quintanaduenas or La Moneda had Jewish ancestors. However, they came from conversed families at the end of the fourteenth century and were already well-integrated in the Spanish society of the sixteenth century (DOMINGUEZ ORTIZ 1993, 178). In this sense, it is extremely difficult to identify who could be or not considered as a New Christian. For the purpose of our analysis all those who are known as having Jewish ancestors are taken as New Christians.

Table 13 – Identified New Christians in Simon Ruiz network, 1553-1597

Time period	Portuguese	Spanish
1553-1559		2
1560-1564	4	14
1565-1568	8	11
1569-1573	10	9
1574-1580	107	24
1587-1589	85	15
1595-1597	55	7
Total	269	82

Source: Bills of exchange and commercial correspondence of the Archivo Simon Ruiz.

The total number of identified New Christians in Simon Ruiz's network is of 351 individuals, which represents 8,4 per cent of the total number of agents involved in it. Even if considering Simon Ruiz as a New Christian, the network does not present confessional endogamy, since the relative number of their presence is inferior to 10 per cent. It is important to stress that this number could rise, because Portuguese and Spanish literature on this topic is not exhaustive in prosopographic studies concerning religious attributes of the agents. An accurate and exhaustive confessional classification of these agents is not, thus, possible in this context.

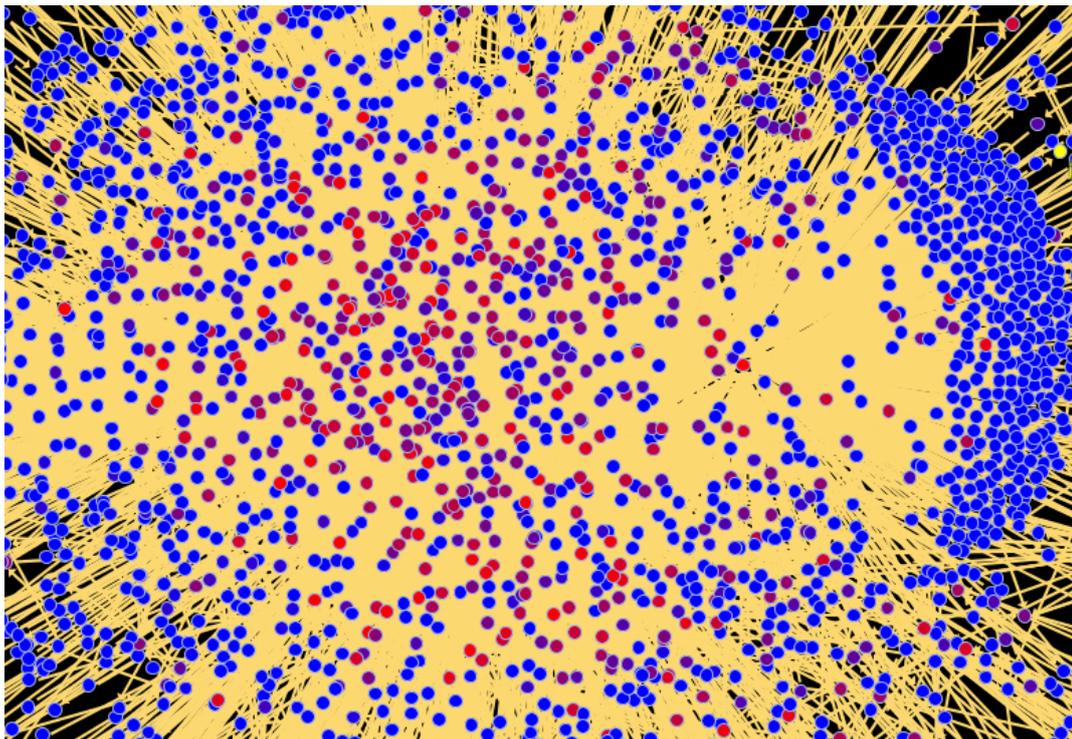
There is a clear preference for Portuguese New Christians rather than for Spanish. This fact suggests that the choice for New Christians was not based in a confessional identity, but on the credibility and financial capacity of the Portuguese merchants. That is even more evident in relative numbers. While Portuguese New Christians agents represent 50,1% of the total number of Portuguese agents involved in the network, Spanish ones represent 5,3% of all the Spanish merchants and bankers in the network.

Looking in detail for these Portuguese New Christians and seeing their roles in business partnerships with other New Christians, we believe that there is more inbreeding within these "Marranos". If one looks to the profile of the sixteenth century Portuguese traders, we can easily see that the names mentioned are part of a national elite in business and represent a large share of the richest merchants of the kingdom (SMITH 1975)¹²⁵. Therefore, it

¹²⁵ There are some authors defending a special character of Jews and Jewish related individuals with this early form of commercial capitalism (ORFALI 1989; NOGUEIRA 2004; COELHO 2001).

seems natural to associate and promote cooperation with those who gave a greater guarantee of success in commercial and financial dealings. Other historians, studying the same kind of communities, for other chronological periods, had reached the same conclusions defending this regularity of inter cultural relationships in early Modern trading (ANTUNES 2009; TRIVELLATO 2009).

Fig. 19 – Betweenness in Simon Ruiz network, 1553-1597



New Christians were not more important than any other agents. Red nodes, which reveal the most important agents to the network sustenance, represent both New Christians and Old Christians. There were New Christians which were very important agents, like Luis Alvares Caldeira or António Gomes, but there were other New Christians with the lowest betweenness centrality, like Tomás Mendes or Diogo Lopes Solis. Some of the Portuguese New Christians, not only those located in Antwerp, but also the ones from Lisbon, and especially the Maluendas, on the Spanish side, were anchor elements in the network gear. But as sustained above, their choice as partners was based in individual business abilities and interests rather than a common confessional identity.

Some researchers have tried to demonstrate that in a first level, networks involving minority groups, as New Christians, were more effective, making easier the access to information, reducing risks and transaction costs. It is only when emerges common business interests and a shared vision of future investments that interethnic and interreligious cooperation materializes (ABDULHAQ-EFFENBERG 2009). However, in the case of Simon Ruiz network, none of partners in the initial years of the network activity did share a common confessional affiliation. The association with other New Christians was promoted by shared investment goals and not the opposite, especially regarding the exponential growth of these agents' number in the network after 1575, when they were strategic partners in finance, both in Lisbon, or in Antwerp.

1.3. National endogamy

In average, Castilian individuals represent 51,3% of agents involved in the network, which raises the question if partner choice was mostly dependent on the feeling of belonging to a national group. Would national similarity mean stronger trust ties?

Data regarding places of activity shows that 76,2% of Castilian agents were settled inside Spanish territory, while only 23,8% were placed abroad. Simon Ruiz has, in fact, chosen as his representative in Nantes, Rouen, Florence and, for some time, in Antwerp, Castilian agents. But in places where higher transfers and risky business were involved, his agents were not from Spain. In Lisbon he counted with a significant number of Portuguese agents, such as Antonio Gomes, Manuel da Veiga or Tomás Ximenes. In Antwerp, after 1575, the Portuguese Filipe Jorge, Luis Alvares Caldera, Simão Rodrigues de Évora and the Genoese Balbanis were Simon Ruiz's favorite agents. In Lyon, the major agents were the Bonvisi, as they would be, later, in Piacenza.

In the early years of network activity, Castilian agents represent one third of Simon Ruiz's partners, and it is only when the network is well established that the percentage of their presence raises to about one half of the partners. This confirms that their presence is strategic within the network business activity, since Castilians were fundamental inside their own kingdom, especially after 1575, when Simon Ruiz is approaching the Court and the high spheres of the Church, both in Rome and in Spain.

We believe that social diversity promoted cooperation in this network, as the moment of greater deals and network growth was uphold by a larger variety of agents, with different backgrounds, as some theoretical works have already demonstrated (SANTOS 2008). The analysis of these features have proven that Simon Ruiz has opted by diversifying his partners,

even though he had a clear preference in choosing other Castilians as well. Studying the robustness of business action in the Medici's network in the beginning of the fifteenth century, Padgett and Ansell concluded that '[...] the more homogeneous the attributes, the less coherent the collective action (PADGETT 1993, 1274) .' Nevertheless this choice by his national coreligionists is hypothetically more concern with partner control on affairs and easiness of communication, at least when they were positioned abroad, than by any sense of "national" identity. Fellow partners, mostly when abroad, may give more guarantees of a prosperous cooperation than others.

2. Levels and mechanisms of economic cooperation and competition between Simon Ruiz and agents in Portugal, 1557-1580

Cooperation in trading networks has not been studied from an historical point of view. The analysis of the mechanisms of cooperation transcends an approach centered on the massive data of the bills of exchange we have been using in this thesis. It requires a qualitative analysis only provided by the personal and business correspondence. The study of Simon Ruiz's business correspondence with agents settled in Portugal between 1557 and 1580 has already been accomplished (SILVA 1959; SILVA 1956), but there are still some questions to be answered, as for instance, those related to the cooperation and competition levels between agents. It would be worthwhile to enlarge this sample to the whole correspondence of Simon Ruiz. However, it is not possible: the amount of letters for the period under study (461 letters) the diversity of its contents and the variability of the letters are not compatible with the schedule of a PhD research. That is why we selected the correspondence with Portugal as a consistent sample to debate the existence of operative mechanisms of economic cooperation in Simon Ruiz network.

Cooperation and competition are part of economic interactions between agents, today, as in the past. Cooperative behaviors between individuals seemed to be '[...] perceived to maximize joint rewards and minimize joint costs'. In competitive states agents maximize their own rewards and minimize their own costs relative to others (JOHNSON 2001, 2748). In this chapter one will try to demonstrate how this dichotomy between cooperators and competitors, in reality, did not always could be perceived as such. One agent could be a cooperator and a competitor during the short or long term the connection with a different individual persisted. This is a mutable and dynamic behavior that should be more acknowledge in historiographic debate.

To this discussion, the categorization of cooperation levels becomes necessary, since economic agents are not embedded with each other in the same way. Based on the levels of historic cooperation described in table 2 (chapter I), the cooperative behaviors identified in Simon Ruiz network had been divided in gradual levels of commitment within cooperation.

To perceive the results of the functioning of a cooperative system it is crucial to analyze the mechanisms that fostered and sustained cooperation. In the literature five main types of mechanisms have been described¹²⁶:

- Kin selection – Partners are selected by sharing genes, i. e., the existence of blood ties promote cooperation.

¹²⁶ (NOWAK 2006; SACHS 2004; GARDNER 2008).

- Direct reciprocity – Cooperation can also emerge between unrelated individuals. The principle that presides to this mechanism is ‘if I cooperate now, you might cooperate later’. It implies repeated interactions between the same pair of individuals, where the memory of results from the ratio cost/benefit performs a determinant role.
- Indirect reciprocity – Several times the interaction among humans is asymmetric, since the parts involved could not reciprocate in the same way. However, cooperation could be still attractive, because it is moved by reputation. Cooperate with another establishes a good reputation, which will be rewarded by others¹²⁷.
- Network reciprocity – Individuals do not interact in the same way and they are related to specific social networks. Among neighbors, a partner who cooperates promoting bysided benefits and helps his partner to gain benefits could attract other individuals to connect with him and to cooperate with each others, forming clusters.
- Group selection – Individuals belong to certain groups. In that sense, the group can evolve faster if cooperation is the internal prevalent behavior. In interaction with other groups, the cooperative group is able to persist.

2.1. Warning relations and the circulation of information

The warning relations between Simon Ruiz and his partners in Portugal, which one designated as communication, are the basis of the first step in cooperative commitment, They reflect the criteria of sharing information in various ways: through a warning, an advice, a partner recommendation. One will see how the connections were fostered and how the information circulated within the network.

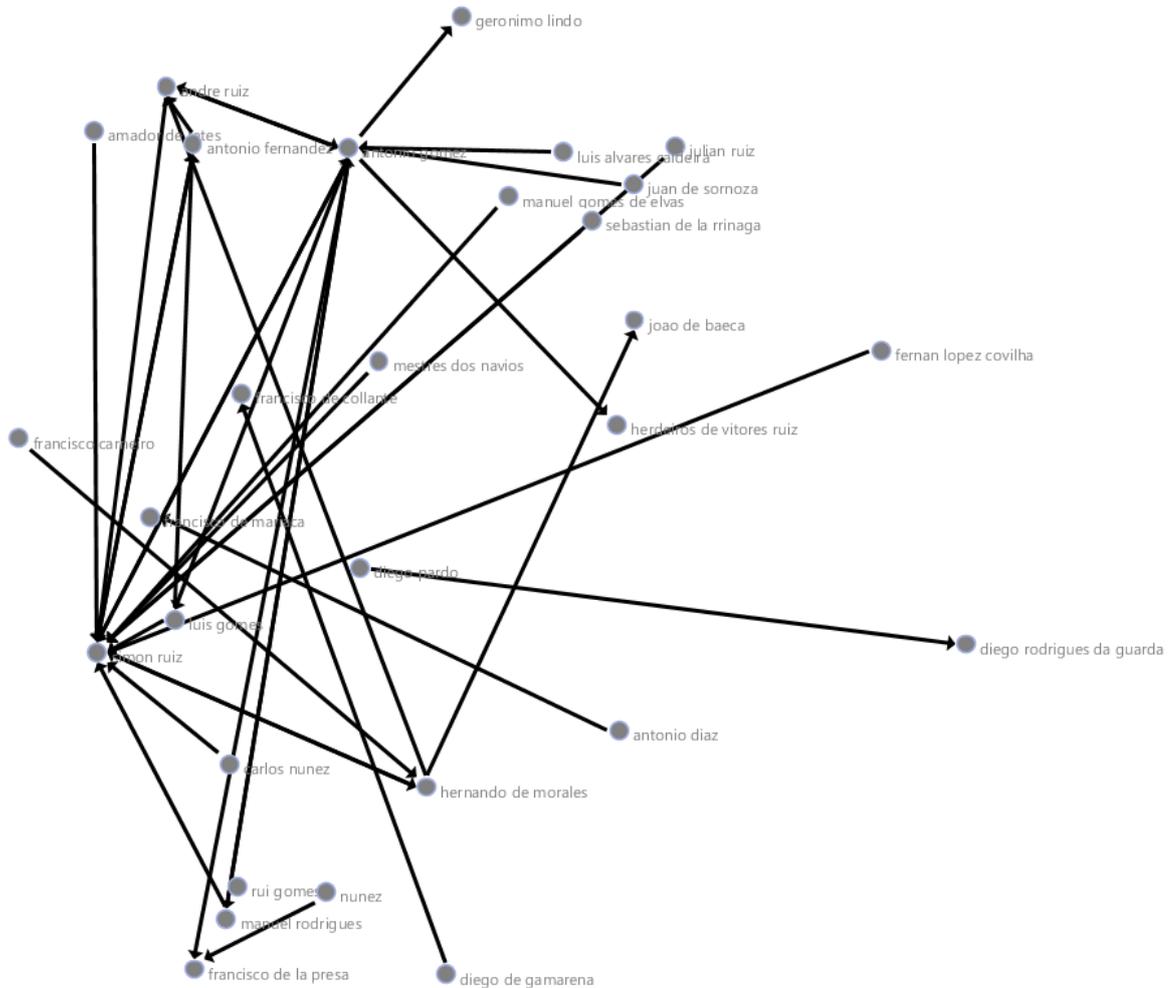
¹²⁷ ‘ When deciding how to act, we take into account the possible consequences for our reputation. We feel strongly about events that affect us directly, but we also take a keen interest in the affairs of others, as demonstrated by the contents of gossip.’ NOWAK 2004: 1561.

Fig. 20 – Warning relations in Simon Ruiz network, 1557-1580

Nr of nodes: 29

Nr of edges: 87

Network density: 0.2



The graph, in the figure above, points out the centrality of Simon Ruiz as a receptacle of information and communication of other agents participating in business, settled in Portugal. This receptor pole is related with the nature of the data source. In Simon Ruiz archive, most of the correspondence with Portugal is the one received and scarcely the researcher has access to a sent letter from Simon Ruiz. On the other hand, the fact of dealing with a personal archive biases the analysis of the agents' connectivity. Other great pole of the warning network was Antonio Gomes de Elvas, the most frequent partner of Simon in Portugal. Contrary to Simon Ruiz, Antonio Gomes is a node of information circulation within the network, performing both as a transmitter and a receiver of information.

These two great points of information are directly related, but only share contacts with three other sources of information, Simon older brother, Andre Ruiz in Nantes, Manuel Rodrigues in Elvas and Antonio's son Luis Gomes de Elvas in Lisbon. Andre Ruiz was Simon's representative in Nantes, to where Antonio Gomes (in a partnership with his son, Luis, and Simon Ruiz) sent, several times, pepper, which he was supposed to sell. The interface of Luis Gomes between Antonio and Simon had a different basis. On one hand, Luis had a blood tie with his father, who was also his partner in businesses related with Oriental Indian trade and with the participation in *asientos* after 1575. On the other hand, Luis was an independent correspondent of Simon in Lisbon. He was particularly active in French textiles importation to Lisbon and indigo exports to be sold in Spain, in which Simon acted as a commissioner. Manuel Rodrigues de Elvas was a distant relative of Antonio Gomes and an active in oriental colonial trade (ALMEIDA 2009, 245), a great friend of Luis Gomes and involved with Simon Ruiz as his buyer of drapes¹²⁸. These ties became relevant because they were sustained by a variable set of relationships which consolidated their activity in this graph with the two most important figures above mentioned. Max Gluckman called these overlapping ties «multiplex relationships», which could favor conflict occasions, but also could create incentives for reciprocity by multiplying the channels of social surveillance (GLUCKMAN 1955, 19-20).

Mostly Simon and Antonio acted mostly as receivers of information: they had their own information sources, who did not receive any information in return. The major figures represented received the information from them and exchanged between each other directly. These punctual informers are Portuguese and Castilian agents, settled in the spaces of business activity in the network. Some of them are representatives of Simon Ruiz as Francisco de Mariaca in Seville or Luis Alvares Caldera in Antwerp; others are relevant correspondents in Portugal, as Diogo Rodrigues da Guarda or Fernão Lopez de Covilhã. Still, in the overall picture of the network, agents who participate in the warning graph are neither the ones with a biggest degree, neither the ones with the biggest betweenness. Simon and António receive the information from a direct source and passed it to preferential partners with significant degree distribution, as one saw in the previous chapters. This means that the information arrived from mouth-to-mouth and apparently passed without a counterfactual quality control. Indeed, most of this network's connections were not reciprocal, or, at least, reciprocity is not patent in the correspondence of the Ruiz's firm. The exception are the ties between Simon Ruiz/ Antonio Gomes, Simon Ruiz/ Hernando de Morales, Andre Ruiz/Antonio Gomes, Simon Ruiz/Antonio Fernandez. This fact demonstrates how the

¹²⁸ Letters ASR-028.1575.032, ASR-034.1576.023.

information exchange in this small graph was well hierarchized. It clearly had some agents at the service of others, displaying the role of information's source.

But what kind of information circulated within this type of partners in a primary level of cooperation?

The reflection of whether there was or not specialized warning relations among this cooperative stage cannot be seriously undertaken, regarding the data collected in this dissertation. In the time period of analysis, most of the letters received by Simon Ruiz from Portugal came mostly from António Gomes, his son Luis Gomes and Ruiz's correspondent Hernando de Morales. In consequence, the other informational sources or recipients participated punctually in this sub network. Even so, and mostly regarding the warning relations between Simon and those three repeated partners, the profusion of information categories was enormous. As there was no product specialization within commerce, this warning relations was not either specialized.

The key words to understand the business information circulating are «to warn», «to advice», «to inform» and «to recommend». This information, establishing warning ties, was extremely personal; one individual expresses his opinion, sometimes without, apparently, fundament it in external opinions or facts. The level of trust in his judgments conditions the acceptance and the validity of his information.

Table 14 – Typology of warning acts in Simon Ruiz contacts with agents in Portugal, 1557-1580.

Typology of warning contents	Number
Advices on best/worst business opportunity	20
Recommendation of partner	2
Business timing	6
Information on payments/ bills' acceptances	12
Information on business concretizations	13
News on competition	2
Advices on trading circuits	1
Advices on ensurances/ prices	4
News on debtors	4
Asientos advices	3
Information on deaths of partners	2
General information on agents	3
Information on products	5
Information on piracy risks	2
SubTotal	79
Unknown contents	4
Total	83

Unknown types of warning relations: 4,8% (4 cases).

Known types of warning relations: 95,2% (78 cases)

Source: ASR, correspondence with Portugal, from 1557-1580.

There were three main types of information circulating among these agents: advices on good or bad business opportunities, payments of cargos and bills of exchange and acceptances of the last ones, as well as news on business achievement. In the first group, partners advice each other on betting in a certain type of business or warn about dropping a certain type of business or investment. In concrete, on the 10th February 1568 Antonio Gomes warn Simon Ruiz how good was the business of wheat importation to Portugal¹²⁹; on the other hand, in July of the same year he advices Francisco de la Presa and the heirs of Vitores Ruiz not to send a new cargo of barley, since the market was saturated and the internal harvest of the product had been good¹³⁰. This type of advice also included financial affairs, as Hernando de Morales writes to

¹²⁹ Letter from Antonio Gomes to Simon Ruiz on the 10th February 1568, ASR-008.1568.084.

¹³⁰ Letter from Antonio Gomes to Simon Ruiz on the 27th July 1568, ASR-008.1568.090.

Simon Ruiz in 1577 advising not to accept letters from Luis Gomes and suspecting from his solvency¹³¹.

Payments of trading obligations, asking for bills of exchange payment or the declaration of its payment guarantee, were as well one of the most common subjects at this cooperative level. In the 1560s crisis in Seville, Antonio Diaz assures Simon Ruiz's representative in the Guadalquivir port, Francisco de Marica, that all the bills of exchange he took to Lisbon, namely to himself, would be paid even knowing the credit crisis in Seville¹³². On the 14th June 1574, Hernando de Morales not only asks Simon Ruiz for paying his bill to Luis Alonso in Medina del Campo, acting as his representative, but he also asks for news on the payment of other set of bills¹³³. In this type of information we also included the warning on payment dates.

The third most frequent typology is related to concrete news on the progression of business: the arrival of merchandises to a certain place, the concretization of certain freights, the escort of a cargo to a certain place, etc. Together these three types of information meant more than half of this information circulation.

Other issues concerning business, such as conjunctural perspectives of business or business routes, opinions on selling prices or in how a certain task in a certain business should be performed, like the *asientos*, were less frequent. Comparing the number of informational ties strictly related to business and the number of ties sustained by information about cooperative partners, one concludes that this level of cooperation was mostly settled by a good advice on business decisions and strategies. Only four types of information are directly related with partner choice – information under debtors, deaths of partners, recommendation of business partners and information on the solvency of partners: together they represent 16 per cent of the sample.

In this sample, there was only two partners' recommendation. They are both recommended by Hernando de Morales, signaling the virtues of a future cooperation with Juan de Medina in 1565 and the wife of Juan Dias, Hernando's sister in December 1576. In the second case, we cannot find the lady acting in the network in subsequent years. In the case of Juan de Medina, he appears for five times in that same year acting as an intermediate in Ruiz's draperies reselling in the Portuguese hinterland market¹³⁴ and his activity in the network became punctual but persisted until 1570. In these warning relations sometimes agents asked for or got news on other agents from a trustful and impartial partner. In April 1577 Manuel Gomes advised Simon

¹³¹ Letter from Hernando de Morales to Simon Ruiz on the 31st January 1577, ASR-034.1576.003.

¹³² Letter from Antonio Diaz to Simon Ruiz on the 19th November 1566, ASR-004.1566.327.

¹³³ Letter from Hernando de Morales to Simon Ruiz on the 14th June 1574, ASR-023.1574.305.

¹³⁴ Letter ASR-003.1565.276.

Ruiz to dismiss business with the Portuguese Ximenes¹³⁵; in the previous year, Hernando de Morales asked Simon Ruiz for information on Gonzalo Salazar¹³⁶.

In this first level of cooperation, the most frequent mechanism of cooperation seems to have been indirect reciprocity, as most of links were not symmetrically directed. Direct reciprocity prevailed in relations which were sustained by overlapping ties. Shared information in the correspondence of Simon Ruiz firm is much more oriented to ensure a solid and profitable business than dealing with other agents. Even so, helping another individual in these asymmetric conditions could be advantageous, not only to foster cooperation with the one to which an advice or a recommendation was given, but with another neighbor in the network – this is the network reciprocity mechanism in place. Individuals with a small connectivity degree direct information to the major hubs which transmit information between them. Regarding how our information was collected it is difficult to obtain strong evidences of such mechanism, but their existence seems plausible.

Most of these information providers were most frequently involved in business affairs and advices. Only those who were connected to more than one partner provide information on agents, performing a more trustful role for Simon Ruiz and António Gomes, who were central receivers of news in the network. The involvement in more delicate and secret affairs was not available to all of these cooperators. Even so, as Avner Greif demonstrated, these information sources helped to enforce partnerships and foment new relations, as well as to minimize the risks of the integration of new partners (GRIEF 2006, 333). It would most probably act as an element of inclusion or exclusion of individuals in the network.

2.2. Collaboration ties

Collaboration is a deeper level of commitment in cooperation relationships which involves a higher degree of investment in fostering and sustaining the relationship. In the case of trade and finance networks it can include the equal sharing of gains and losses, the division of tasks in a specialized exchange of services, or facilitating loans. The help given should imply a higher cost and risks, but the revenues should also be bigger.

In the historical sample of this case study, the graph of collaboration ties is bigger than the one analyzed above. There was a great number of partners embedded in this type of

¹³⁵ Letter from Manuel Gomes to Simon Ruiz on the 13th April 1577, ASR-039.1577.076.

¹³⁶ Letter from Hernando de Morales to Simon Ruiz on the 30th December 1576, ASR-034.1576.003.

cooperation, which would be more profitable, involving 93 different agents. Still, these ties were established in a very dyadic way and were not favored by the network business strategy, but by an individual one, as the graph below demonstrates. That is why the level of density in the network is so low.

Fig. 21 - Main part of collaboration ties in Simon Ruiz business activity with Portugal, 1558-1580

Nr. Of ties: 93

Nr. Of edges: 293

Network density: 0.06



In this intense level of cooperation, the establishment of cooperative relationships was developed in a star-shape topology centered in four main hubs: Antonio Fernandes de Elvas, Simon Ruiz, Antonio Gomes and Hernando de Morales. Link's direction evidences that most of these relations were not reciprocal, even if there were 13 exceptions. The direct reciprocity in the graph involves the direct relations among the hubs, on one side – Hernando de Morales/Simon Ruiz, Antonio

Fernandez/Simon Ruiz, Antonio Fernandez/Antonio Gomez, Antonio Gomez/Simon Ruiz; and, on the other side, relevant and repeated partners in Portuguese trading and financial business opportunities. For instance, Francisco de la Presa is reciprocally connected to Antonio Fernandez, Antonio Gomes and Simon Ruiz. The elder brother of Simon, Andre Ruiz of Nantes is reciprocally related to Antonio Gomes, but not to his brother. However, one must admit that this lack of reciprocity between the two brothers could be a bias of the documental corpora selected, which can be clarified studying the correspondence between André and Simon that was not included in the empirical work of this dissertation. Other characteristics, even if rarer, in reciprocal collaboration relationships are the overlapping of familiar and economic collaboration ties. This situation occurs only three times between the Portuguese New Christian family of the Gomes de Elvas: there is a business collaboration tie between father and son – Antonio Gomes and Luis Gomes -, between uncle and nephew – Luis Gomes and Carlos Nunez, and between the father and the father in law – Antonio Gomez and Antonio Fernandez, father in law of Luis Gomes. In this way, one understands that kinship is not a determinant factor to establish cooperative, repetitive and strong relationships in trade and finance in the sixteenth century.

In non reciprocal collaborative relationships there were other kin ties, besides those identified between Andre and Simon Ruiz. The other brother of Simon, Vitores, appears as a minor partner of Simon Ruiz in Sevillian trade in 1564, together with Francisco de la Presa¹³⁷ and his heirs. In 1568, Simon sends them a bill of exchange, to regulate some profit payments in a business in which their father had participated¹³⁸. In July the same year, Antonio Gomes also shares costs and profits in the barney sold in Lisbon with Francisco de la Presa and the heirs of Vitores Ruiz¹³⁹. The inclusion of the heirs of a former collaborator in the network seemed to be related with unfinished matters with the departed. The perseverance of these ties was not necessarily the expression of an extension of trust and solid collaboration from one to the other generation. Simon's nephew, Pero Ruiz appears in collaboration, not with his relatives, but with Diego de Vitoria, with whom he had a partnership in insurance business and with Antonio Gomes, to whom he asks for a loan¹⁴⁰. Should he benefit from his uncle reputation and success to have access to new partners? Even if we do not have systematic proofs on this issue, we believe that the case of Pero Ruiz is paradigmatic, since his uncle is still alive to guarantee any businesses damage provoked to his partners. But after Simon was gone, his nephew did not succeed in the business world (LAPEYRE 1955, 96).

¹³⁷ Letter from Gregorio de Sanctotus to Simon Ruiz on the 3rd January 1564, ASR-002.1564.346.

¹³⁸ Letter from Antonio Gomes to Simon Ruiz on the 18th May 1568, ASR-008.1568.087a.

¹³⁹ Letter from Antonio Gomes to Simon Ruiz on the 27th July 1568, ASR-008.1568.090.

¹⁴⁰ Letter from Antonio Gomes to Simon Ruiz on the 19th June 1576, ASR – 034.1576.033.

On the Portuguese branch, Manuel Gomes de Elvas, half brother of Antonio Gomes and Carlos Nunez, and uncle of Luis Gomes and Duarte Mendes, son of Antonio Gomes and brother of Luis Gomes, also collaborated in these affairs. This last one became a new partner of Simon Ruiz by the intermediation of his father and elder brother, after 1575¹⁴¹. A month later he was already asking Simon for a loan¹⁴². Manuel Gomes de Elvas was an older collaborative partner. His role in the network varied and he appeared as a partner in trade or asking favors to Simon. He repeatedly asked Simon to send his letters to Flander's partners or to be an investment partner in *asientos*, for instance¹⁴³.

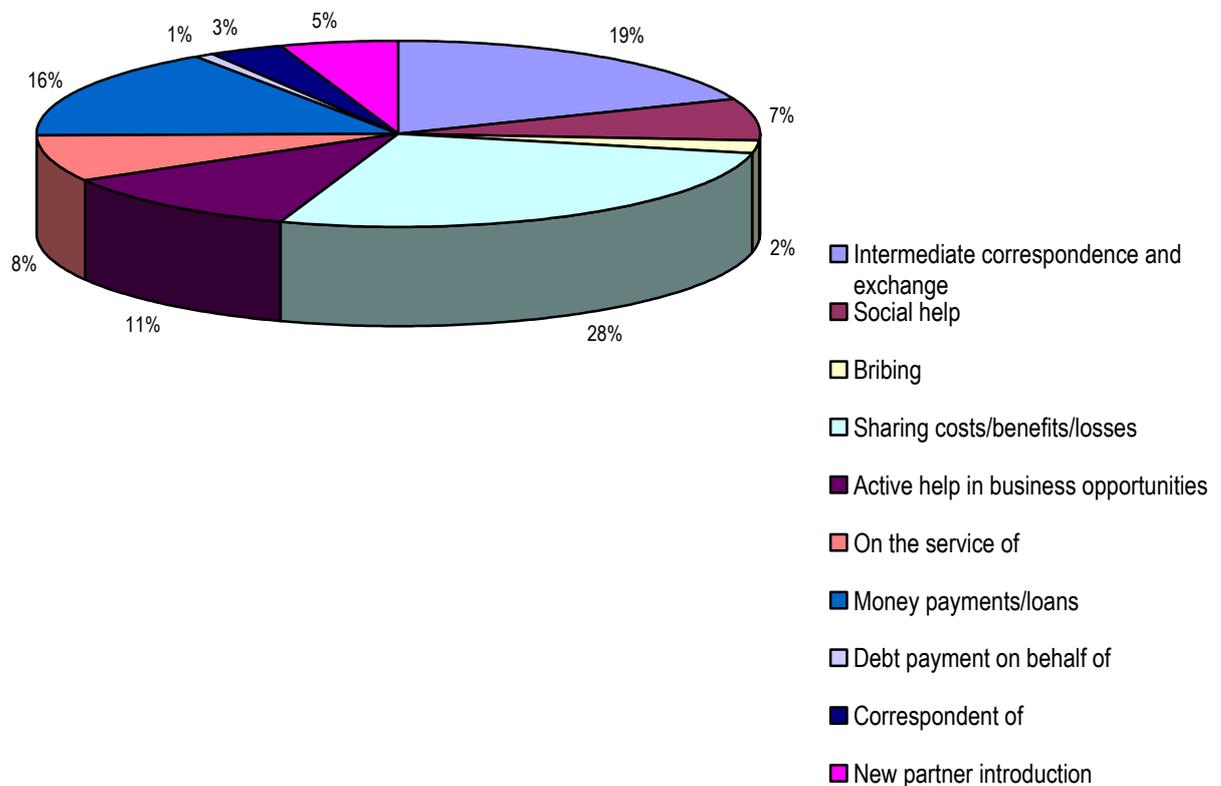
Comparing partners in warning and collaboration relations in the network, it is remarkable that more than half of the members of the warning ties also belong to the graph of collaboration ties. Still, they only represent 18,3% of collaborative partners. This means that to establish a deeper cooperative connection with someone it was not fundamental to participate in a first level of partner's assistance. On the other hand, most of the individuals who gave advice, who recommended new partners, who informed on trading best products and prices were also collaborative partners. Others never became part of a more intense and long collaborative relationships. The duration and frequency of contacts seems to be a determinant condition to establish such a cooperative activity.

¹⁴¹ Letter from Duarte Mendes to Simon Ruiz on the 8th June 1575, ASR-028.1575.044.

¹⁴² Letter from Duarte Mendes to Simon Ruiz on the 13th July 1575, ASR-028.1575.075.

¹⁴³ Please see his person file in <http://timelink.fl.uc.pt/mhk/dyncoopnet/id/rp-robot-1673>.

Chart 9 - Typology of collaboration ties in Simon Ruiz's Portuguese affairs, 1558-1580



Unknown types of collaboration relations: 5,1 % (15 cases).

Known types of warning relations: 94,9% (282 cases)

Source: ASR, correspondence with Portugal, from 1557-1580.

The total sharing of gains and losses represent almost 30 per cent of the collaboration ties. In this group one can find partnerships in certain businesses as wheat, salt, pepper, but also partnerships in *asientos* after 1575. In 1576 Luis Gomes had a contact in India and he participated in a concrete purchase of Indian product with Simon Ruiz and Francisco de la Presa, in which each one was investing 2000 *cruzados*¹⁴⁴. Several times Antonio Gomes asks Simon Ruiz to send him his profits, both of trade and *asientos*.

The second most common situation in collaborative ties was the demand for someone who could intermediate the act of sending some correspondence (which included packets of bills of exchange) when there was lack of transports for letters between Lisbon and Flanders. Simon Ruiz developed a key role in intermediating these affairs for his Portuguese partners. There is no

¹⁴⁴ Letter from Luis Gomes to Simon Ruiz on the 7th March 1576, ASR-034.1576.030.

evidence, in the correspondence, that he received any commission on doing such a favor. Cooperation was fostered in a community who traded favors, and depended of one another's credit. This honorable and almost altruistic behavior was used as a strategy to attract creditworthiness. In a network in which State control was missing, this type of strategy enforced ties (TAYLOR 2003, 12).

The activity of money dispatching and loan granting represents 16 per cent of the sample. In the Ruiz firm's correspondence one perceives not only the act of lending money to a partner, and we can also detect pleas for certain amounts of money or for money advance in order to obtain liquidity. In 1576, Antonio Gomes de Elvas asked Jeronimo Lindo in Antwerp for a loan of six thousand cruzados¹⁴⁵. In 1568, wanting to double a wheat order in Brittany, Antonio Gomes benefited from a loan from Andre Ruiz, which should be deducted from Gomes profit in the grain sale¹⁴⁶. In 1574, Hernando de Morales owed 600 ducats to Agustin Spínola, for merchandise rights in Badajoz. His brother in law and his friend Alonso Delgado lent him the amount and, at the time, Hernando was asking Simon the same amount to pay them¹⁴⁷.

Eleven per cent of these collaboration included active help in business opportunities that could imply asking someone to make a freight or an insurance on his own behalf, writing periodical reports, accompanying a cargo in certain track. These tasks usually resulted in the payment of a commission in exchange. This is the case, for instance, of Antonio Gomes, who agreed to be a representative of Simon Ruiz's friend, Antonio de Quintanaduenas, in purchasing salt in Setubal, in exchange of a high commission on the business¹⁴⁸. The same self-interest process was applied when one agent agreed to pay a debt of a partner, which seldom occurred. Hernando de Morales asked Simon Ruiz to pay his debt to Don Luis de Toledo in the end of 1576¹⁴⁹.

Less frequent but symbolic was the act of one individual put himself on the service of someone. This expression was very common in merchant's correspondence in this chronological period. It was more than a rhetorical sentence. It was a statement for assuring an agent the will to cooperate with him. Since it would be advantageous and profitable to have business with one successful business man, those proposals are recurrent. António Gomes in 1573 puts himself on

¹⁴⁵ Letter from Antonio Gomes to Simon Ruiz on the 8th February 1576, ASR-034.1576.025.

¹⁴⁶ Letter from Antonio Gomes to Simon Ruiz on the 13th September 1568, ASR-008.1568.092.

¹⁴⁷ Letter from hernando de Morales to Simon Ruiz on the 3rd December 1574, ASR-023.1574.306.

¹⁴⁸ Letter from Antonio Gomes to Simon Ruiz on the 24th December 1574, ASR-023.1574.292.

¹⁴⁹ Letter from Hernando de Morales on the 30th December 1576, ASR-034.1576.003.

the disposal of Simon Ruiz and Hernando de Morales¹⁵⁰. Carlos Nunez also wrote to Simon Ruiz «*coloco me ao servico de Vossa Merce*»¹⁵¹.

In the correspondence it is clear that the act of business cooperation also included helping someone socially. Those who helped intended to enhance better reputation for his partner and to attract more investment in his business. Schulte-Beerbuhl has found the same results concerning German merchants in London in the eighteenth century, defending that social life also stimulated a cluster of obligations and could strengthen economic relations (BEERBÜHL 2008). One example occurred when the sister of a Ruiz partner – Pedro Gutierres – was getting married. Hernando de Morales recommended Simon Ruiz to buy her a wedding present to offer directly to Pedro Gutierres firm¹⁵². Antonio Gomes asked Simon Ruiz to escort his son to a fair in Castile in 1572¹⁵³. Even if the motives are not expressed in the letter, one can conceive that the introduction of his son by one of the local most prestigious figures, to important businessmen, in a space with European expression, could bring significant advantages to establish new contacts.

In this time line, there were 5 per cent of the agents who were introduced and accepted in the network because they wanted to serve Ruiz. They were recommended and introduced by the most frequent and ancient partners such as Antonio Gomes, Luis Gomes and Hernando de Morales.

Even if irrelevant, this more profound level of cooperation sometimes included acting in a less proper way, sometimes taking illegal actions to facilitate trade of a partner or to reduce costs and enlarge profits. In 1574, the priest Adriano Tornelio has bribed the customs officials in Lisbon to reduce taxes in the Indian imports of Simon Ruiz¹⁵⁴. Collaboration obliged a deeper level of trust in cooperative commitment, which often comported more risks and costs, but also foreseen bigger profits and expectations of direct cooperative reciprocity, even if this mechanism was rarer in this sample.

¹⁵⁰ Letter from António Gomes to Simon Ruiz on the 29th December 1573. ASR-020.1573.215.

¹⁵¹ Letter from Carlos Nunez to Simon Ruiz on the 15th April 1574. ASR-023.1574.275.

¹⁵² Letter from Hernando de Morales to Simon Ruiz on the 14th June 1574, ASR-023.1574.305.

¹⁵³ Letter from Antonio Gomes to Simon Ruiz on the 7th May 1572, ASR-017.1572.259.

¹⁵⁴ Letter from Antonio Gomes to Simon Ruiz on the 15th April 1574, ASR-023.1574.275.

2.3. Non-cooperative behaviors

The negative side of cooperation can be also analyzed in a gradate perspective. The less damaging level of non cooperation is competition, because it is transparent: if one was openly competing for a same resource – a product to trade, for example – one should not expect help and collaboration from that agent. On the opposite, an individual who had acted previously as a cooperater could decide to act as a defector or a cheater, causing a profound disruption, either in the partners who were deceived, and in the rest of his neighbors.

Competition is the counter balance of cooperation and one could assume that competitors in any economic activity should be located outside a merchant network, and thus not being considered in the cooperation scope. Even so, such division does not correspond to the reality. Things change through time and one could be simultaneously a cooperater and a competitor. In the case of Simon Ruiz network of Portuguese business it was detected only three cases of open competition. One should caveat that in the correspondence exchanged by Simon and his correspondents in Portugal the agents who did not belong to a partners network were less named. Even so the duality between being an active partner in the network and being a competitor is evidenced by the case of Gonçalo Perez that appears as a taker of Antonio Gomes' bills of exchange in Lisbon and as his competitor in the indigo trade and its export to Castile¹⁵⁵.

Correspondence is more prolix on pointing those who damaged network activity. They are, on one hand, defectors - the ones who were expected to cooperate, but refused to do so. On the other hand, they are cheaters – those who deceived partners on purpose, and were benefiting from them without participating in the costs.

¹⁵⁵ Letter from Antonio Gomes to Simon Ruiz on the 24th December 1574 and on the 25th November 1574, ASR-023.1574.292 and ASR-023.1574.289.

Fig. 22 - Defection relationships within Simon Ruiz Portuguese business partners, 1558-1580



In the figure above are represented defection relations. In red are represented the individuals who, in a certain time, decided to defect a cooperative relationship. Defection ties are profoundly connected with refusal in paying bills of exchange ending in protest them. These cases interrupt cycles of continuous cooperative relationships. Genoese Pau and Juan Sauri refused to pay a bill of exchange issued by the Portuguese Luis Gomes, whose collector was Simon Ruiz's employee Fernan Correa de Velasco¹⁵⁶. In other cases, trustful partners who used to pay their debts do not pay it. That was the situation of Estevan Lomelin. In 1575, year of a

¹⁵⁶ Letter from Antonio Gomes to Simon Ruiz on the 3rd November 1575, ASR-028.1575.030.

major Spanish bankruptcy which deeply affected Genoese investors, he did not pay a debt to Luis Gomes¹⁵⁷. This information in the correspondence, which did not directly involved the sender and the receiver, was written in the form of alert, underlying that an agent involved in Simon Ruiz's business network was not honoring his commitments.

The other major motive of defection is the failure of cooperation expectations in favoring business. One of the biggest disappointments has to do with business secrecy, deceiving usual partners in business and hiding parallel partnerships. Simon and Andre Ruiz had hidden a parallel business in spices export with Manuel Gomes, *in absentia* of Luis and Antonio Gomes¹⁵⁸, traditional partners of the Ruiz brothers. Julian Ruiz, on his side, has refused to send a correct report of his current account with Manuel Gomes de Elvas. The accountability was intentionally not correct in what regards trade in sugar and spices, which has disappointed the Portuguese agent¹⁵⁹.

There are also evidences of a certain lack of flexibility in business, in a relationship sustained not only by trading ties but also by familiar identity. Carlos Nunes knew that in Portugal, by that time, trading good quality textiles was difficult because Portuguese did not appreciate it so much. His illegitimate brother, Manuel Gomes, asked him to exchange that order by an indigo cargo which his own brother did not accept¹⁶⁰. This is other major prove that kinship was not a condition for sustaining business cooperation and, in this sample, the brother Andre and the nephews Julian and Pedro were not the most trustful agents in a network, in which Simon was named as responsible by his family member's violation of a solid business collaboration.

Comparing agents involved in defection and collaborative or warning ties one finds, in most cases, the same individuals. Cooperation and defection were part of the same dynamics in the network. One agent, involved in the same network, in a short period of time, may act both as a cooperator and as a defector, in a same connection. For a concrete analysis of this dynamics, the study of the evolution of three concrete relationships evidence the repercussions of episodes of defection in a solid cooperative relationship.

One of the best representative relations of a strong bond in this sample was the one fostered between Simon Ruiz and Antonio Gomes. The first vestige of this connection dates from the 11th March 1564 and it is a letter sent by Antonio Gomes to Simon, explaining that he had paid two bills of exchange taken by Simon to Lisbon and adjusting a current account. We know that this relation was maintained until 1579. Still, in 1575 things began to be complicated between

¹⁵⁷ Letter from Antonio Gomes to Simon Ruiz on the 16th December 1575, ASR-028.1575.032.

¹⁵⁸ Letter from Manuel Gomes to Simon Ruiz on the 24th February 1577, ASR-039.1577.071.

¹⁵⁹ Letter from Manuel Gomes to Simon Ruiz on the 28th March 1577, ASR-039.1577.075.

¹⁶⁰ Letter from Manuel Gomes to Simon Ruiz on the 20th September 1576, ASR-034.1576.006.

them. Simon refused to make a business in indigo that Luis Gomes, son of Antonio, had asked for. This one wrote he was going to do business with Manuel Rodrigues instead¹⁶¹. During 1576 and 1577 Simon Ruiz continued to be a partner of Antonio in risky affairs of *asientos* which involved an important deal of trust. At the end of 1577, Simon began to refuse to include Antonio in one *asiento*, which he regretted profoundly¹⁶². Their cooperation persisted until Antonio's death in 1579. Despite partner's complaint on lost business and dashed expectations, defection did not mean, in this case, punishment or exclusion. Other current businesses were more profitable and maybe the long and frequent duration of this relationship could sustain temporary misunderstandings.

A connection between Simon Ruiz and Antonio de Quintanadueñas was born, at least in 1568, them being introduced by the Bonvisi bankers of Lyon. Antonio was already their client. He was a partner in salt trade between Portugal and Rouen along with Simon Ruiz and Antonio Gomes, and he was also a correspondent of Simon in exchanging. In 1577 Ruiz decided not to continue this partnership¹⁶³. However, the link only disappeared totally in 1590.

Simon Ruiz and Juan Rodrigues Bueno, brother in law of Ruiz's employee Hernando de Morales, were linked since 1575 until 1586. In 1575 two episodes of defection from the Portuguese towards Simon happened. One in which the Portuguese Bueno did not follow the order of Simon in acting as his representative and another in which Juan Rodrigues Bueno refused to do businesses in partnership with Simon Ruiz and the Bonvisi, because they were Italians and were annoyed with the Portuguese¹⁶⁴.

In these cases, defection was not frequent. It happened punctually and was marked by a temporary refusal to cooperate. Even if defection happened more than once, involving business revenues, the strength and duration of the relation usually sustained the negative impact of defection, and the past successful partnership tended to be reestablished.

Cheating occurred as frequently as defecting in this network and almost all the same agents were involved. As in defection, cheating was unilateral most of the times. Here the level of deception was bigger. Cheating involved pure deceiving.

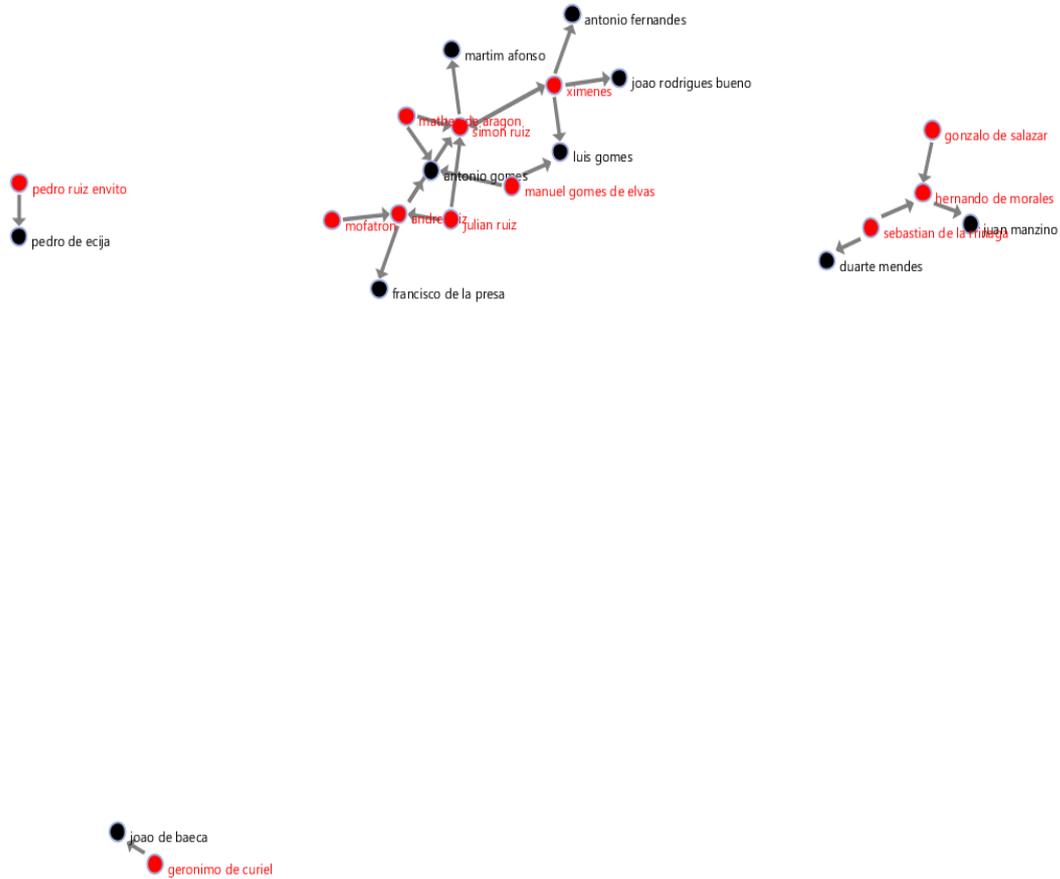
¹⁶¹ Letter from Luis Gomes to Simon Ruiz on the 22nd November 1575, ASR-028.1575.035.

¹⁶² Letter from Antonio Gomes to Simon Ruiz on the 4th October 1577, ASR-039.1577.049.

¹⁶³ Letter from Antonio Gomes to Simon Ruiz on 28th March 1577, ASR-039.1577.075.

¹⁶⁴ Letter from Juan Rodrigues Bueno to Hernando de Morales and Simon Ruiz on the 24th August 1575, ASR-028.1575.057.

Fig.23- Cheating relationships within Simon Ruiz Portuguese business partners, 1558-1580



Cheating behaviors were characterized by not paying obligations, competing with a traditional cooperator in secret and gaining in both businesses, stealing goods from one’s client, failing with the committed word, an important behavior when there were no written contracts. Sometimes the Portuguese correspondence mentions cheating occurrences which involve, if not direct partners in Portuguese affairs, at least others agents which belonged to Ruiz’s network and have betrayed their partners. It was the case of Geronimo de Curiel, partner of Ruiz between 1558 and 1568. After that moment, he did not maintained direct relations within the network. We do not know what has happened but he was mentioned in the seventies by an action of cheating to a current partner of Simon Ruiz, João de Baeça, who was already in the Court because of a payment in a false Castilian coin¹⁶⁵. It was important to be aware of these problems to avoid involvement with these agents.

¹⁶⁵ Letter from Antonio Gomes to Simon Ruiz on the 4th august 1575, ASR-028.1575.026.

As in defection, sometimes cheating happened between kin. Manuel Gomes deceived Simon and Andre Ruiz because he sent pepper to be sold in Nantes in secret and with the disapproval of his brother and nephew, Antonio and Luis Gomes. These warned Simon even if placing their parent at stake and damaging his trustworthiness¹⁶⁶. Even so, relations between Simon and Manuel persisted. Other case happened between Simon Ruiz and his nephew Julian Ruiz. He was competing in secret against his uncle in the salt trade¹⁶⁷. But the issues against this nephew have become accumulated until 1577, date from when he was no longer linked directly to his uncle. He appears until 1586 as a debtor of a multiple agents, such as the Bonvisi¹⁶⁸.

However, in cheating there were times in which the offense could be so severe that the punishment was breaking the relation for good. Mateo de Aragon has played with the fire. He was the responsible for selling Simon's indigo in Castilian market, but he was stealing some of the product of his boss, trying to sell it to two faithful partners of Simon – Deiphebo Roqui and Antonio Gomes, who found the event highly suspicious¹⁶⁹. He was banned from the network after this episode. The same happened to Sebastian de la Rinaga who cheated Hernando de Morales and Duarte Mendes in a salt cargo that was worth more than 3500 ducats and he sold it for 1600¹⁷⁰. He disappeared from the network. Both of these relations were among the less frequent and more recent, fostered for less than 10 years, and, by that fact, more vulnerable.

Cooperation and non-cooperation seemed to have coexisted in trading networks of the sixteenth century. Collaboration was the most frequent level of cooperation. Nonetheless, for establishing such ties, it was not necessary to invest in a less embedded level of cooperation, such as warning relations. Defection behaviors did not always meant exclusion from the network and punishment was not evident in our documental corpora. However, some of these defective relations were, *a posteriori*, reciprocated, even if it did not always happen. The refusal to cooperate was tolerated and, even though expectations were defaulted, the strength of the ties in place, as much as the existence of past successful partnerships, overcame such obstacles in cooperation. Cheating, on the other hand, was more harmful to cooperation, especially when the deceiving severely damage business and trust. In such cases cooperative partnerships were broken and the cheater expelled from the network.

¹⁶⁶ Letter from Manuel Gomes to Simon Ruiz on the 18th February 1577, ASr-039.1577.070.

¹⁶⁷ Letter from Antonio Gomes to Simon Ruiz on the 2nd January 1574, ASR-023.1574.292a.

¹⁶⁸ Bill of exchange ASR-02.1582.109.

¹⁶⁹ Letter from Antonio Gomes to Simon Ruiz on the 23rd April 1573, ASR-020.1573.221.

¹⁷⁰ Letter from Hernando de Morales to Simon Ruiz on the 12th April 1575, ASR-028.1575.075.

In Simon Ruiz network, the evolution of cooperation was less moved by kin selection than by other mechanisms of cooperation. The association with kin existed – the representation of Simon Ruiz by his brother André in Nantes, which was also a partner in some trading affairs or the partnership in business between the members of the Gomes de Elvas family provide good examples of that. Nevertheless, most of cooperators in the network were not members of the same family. In the case of Ruiz family, Simon's nephews were associated to his business network as a form of protection and promotion, but they were not the most preserved and fruitful ties.

The predominant mechanism was, indeed, indirect reciprocity, with the expectation of being in the future reciprocated and helping to attract new partner, which was combined by a network effect. Direct reciprocity was prevalent in long lasting and very frequent relationships. Less often it is visible the mechanism of group selection as a strategy to protect the cohesiveness of a solid cooperative network of business partners. It was important to follow rival agents actions to prevent disturbance within the network. Mechanisms of cooperation were used simultaneously, adapted to a specific business situation (NOWAK 1998, 576). This mechanism was combined with a network effect. Direct reciprocity was prevalent in long lasting and very frequent relationships.

In this chapter, we have verified how information could be controlled and how it was important to reveal cooperative behavior of other individuals, broadcasting it throughout the network. Scholars have designated this mechanism of cooperation as 'signaling'. Any kind of signaling other's activity, even if not directly related with the interacting partners, influenced the overall network cooperative dynamics (SKYRMS 2010). Less often it is visible the mechanism of group selection as a strategy to protect the cohesiveness of a solid cooperative network of business partners, namely against competitors. It was important to follow rival agents actions to prevent disturbance within the network. Different mechanisms of cooperation were used simultaneously and adapted to specific business situations.

3. Trust and distrust

Trust is a broad and multidisciplinary concept studied in many perspectives. One of those perspectives is related with economic exchanges in history. New Institutional Economy recognizes that some business networks need institutions to foster the ability to commit and one of those institutions could be rules and beliefs. Those networks produce or influence the production of rules and make them known, contribute to the perpetuation of norms, and influence the set of beliefs that can prevail regarding a particular transaction (GRIEF 2000, 257).

Departing from this assumption, the definition of trust proposed by Piotr Sztompka seems to adapt to these economic reality – ‘Trust is a bet about the future contingent actions of others (SZTOMPKA 1999, 25)’, involving, in this way, beliefs but also commitment, just as cooperation. Cooperation requires trust since ‘dependent parties need some degree of assurance that non-dependent parties will not defect’: - that is individual based belief (WILLIAMS 1990).

Some experts have proven that trust would be a solution to reduce uncertainty in long-distance exchange, as it would have happened in Early Modern times (LUHMANN 1994, 96). Trust is a mechanism, created by men, to deal with one’s partner’s actions, which we cannot monitor; it bets on potential beneficial orientation of future actions of others which conditions present decision-making of who trusts: it ‘[...] is a tentative and intrinsically fragile response to our ignorance, a way of coping with the limits of our foresight (GAMBETTA 1990, 218).’ Besides, trust reduces transaction costs and enhances cooperation hypothesis (SZTOMPKA 1999, 105).

In Early Modern merchant networks historiography scholars have tried to demonstrate how trust was important to sustain business ties (LAMIKIZ 2010 ;BEERBÜHL 2008;CRESPO SOLANA 2010;TRIVELLATO 2009). Even if this judgment is mostly based in commercial correspondence, information regarding trust ties in historical studies is ethereal regarding the variables which condition the establishment of trust between merchants. Traditionally historiography points to consolidated trust relationships in kinship and national and religious identities. In this chapter, we propose to verify some indicators of trust and distrust in business relationships, having the Simon Ruiz network as a case study, and try to understand which strategies were used to maintain and to establish trust relationships between merchants and bankers in the second half of the sixteenth century.

Sociologist Szompka defends that trust building is sustained by three main characteristics:

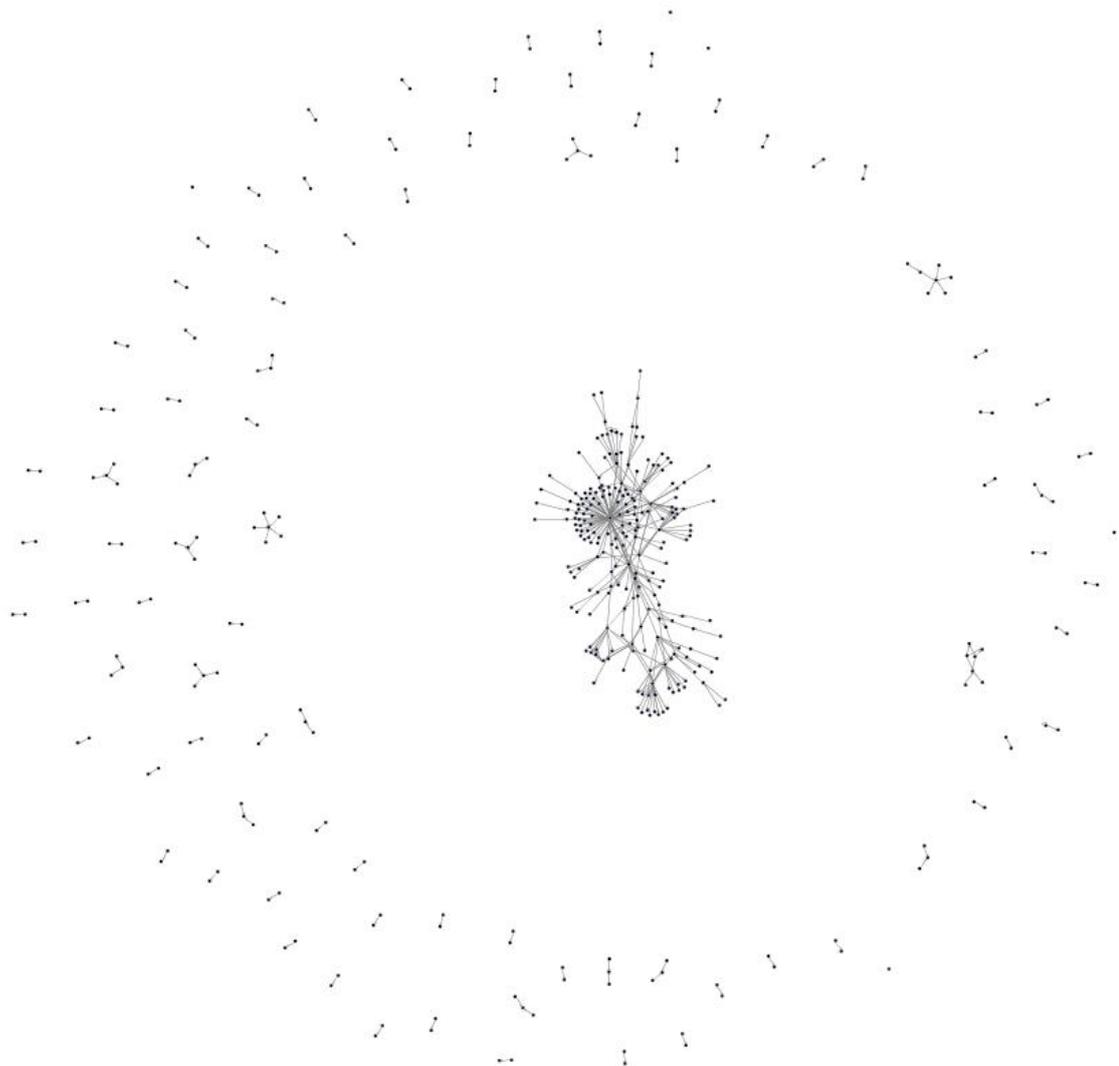
1. The estimation of the degree of trustworthiness of another agent through the evaluation of his individual characteristics. This evaluation is strongly conditioned by agent’s

reputation, inferred from an overall or individualized knowledge of someone's past actions. A subchapter will be dedicated below to this aspect. The evaluation of one's trustworthiness can also be based in present performances, conduct and success. However, 'extrapolation from presently observed episodes of conduct to the future basing trust on that, is much more risky than extrapolation of long and consistent trends (SZTOMPKA 1999, 77).' Finally, appearance is also a parameter to evaluate. As it was shown before, most of these merchants had not a direct and personal knowledge on partners. That is why individual attributes and identities even if referred by intermediaries or deduced from business behaviors should therefore be considered as part of this evaluating attribute.

2. The external and historical contexts in which individual's actions are being developed, namely through formal or informal agents or institutions, which monitor and sanction the conducts of the ones who are trusted.
3. Existence or non existence of «culture of trust» (SZTOMPKA 1999, 99). This culture could be based in personal and biographical characteristics of someone, developed from the beginning of one's socialization, whether he had or had not learn to trust others. In this sense, it could be natural to trust or not. On the other hand, there are norms and values' systems which rule life in society, which vary in time and space. Following this principle it would be useful to address the question if in the given time under analysis the social system on place compelled agents to naturally trust or not. It is nevertheless acceptable the idea that in a complex financial and economic system geographically wide, like the one we are studying, several «cultures of trust» could coexist.

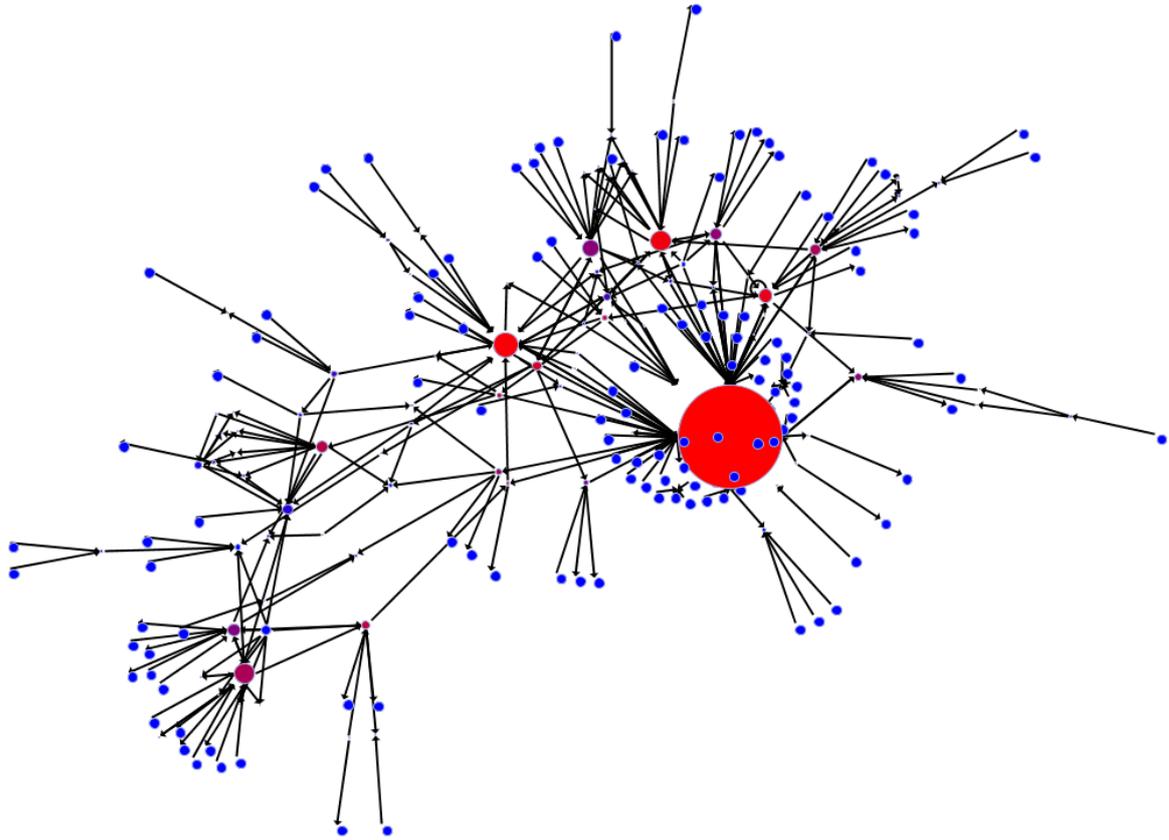
3.1. Trust relationships

Fig. 24 – Trust relationships within Simon Ruiz Portuguese business partners, 1558-1580



According to the figure above, it is clear that part of trust ties evolved dyadically, based in bilateral individualized contacts and did not evolved within the network. However, a considerable part of these ties spread in a small network, constituted by bigger and smaller stars. Some individuals had a personal group of people who trusted and some of those key individuals connected these small clusters, propagating trust within a considerable number of agents. In this sense, they both enlarged the network of trustworthy contacts and strengthened relationships which could help to foster cooperation.

Fig. 25 - Betweenness and total degree of Simon Ruiz's trusting network, 1553-1597



Legend: Node's size is equivalent to the number of total degree

Node's color varies from blue to red, being in blue the nodes with smaller betweenness centrality and in red the nodes with higher betweenness centrality.

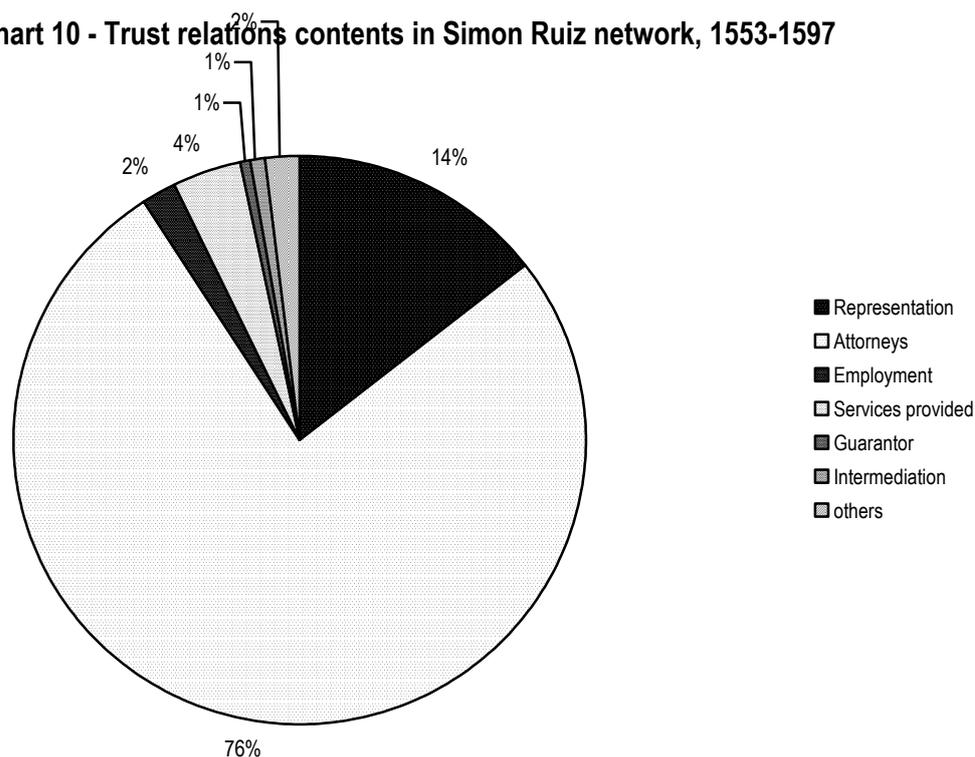
According to the degree distribution, the most trusted agents in the network were Simon Ruiz, Lope de Arciniega, António Gomes and Simão Rodrigues de Évora. They were the most connected individuals concerning trust, but at the same time, they were key figures to link small trust clusters, enabling trust to expand within groups. Still, other agents, with smaller number of contacts, displayed a key role consolidating trust within different subgraphs, like Luis Gomes, Hernando de Morales, Juan Ortega de la Torre, Hernando Correa de Velasco, Cosme Ruiz Embito, Francisco de Bobadilla, Fernão Ximenes, Martin Perez de Varron and Fernão Dias. Those agents were part of those individuals who both belong to the trust graph and to the collaboration graph, noticing that in about 50 per cent there was a correspondence of collaboration and trust. But the opposite does not seem to be true. The individuals belonging to the collaboration graph only represent 10,3 per cent of the agents involved in trust relations. Yet,

one remark should be made: while information about cooperation was mostly extracted from the Ruiz firm correspondence, trust relations were also extracted from the information available in the bills of exchange, circumstance which is responsible for the rising of the number of trust relations identified.

Social researchers state that the criteria of similarity are essential for the existence of trust – ‘people tend to trust others who are similar to them and to distrust those who are dissimilar from them (EARLE 1995, 17)’, since predicting the behavior of those who have similar attributes to ours is easier (HARDIN 1993, 512). Historians also insist in this idea, namely regarding business groups which are mostly composed by minorities, as New Christians and Jews. Braudel defended that every minority has a natural tendency to cohesion, mutual help and self-defense (BRAUDEL 1985, 139).

Regarding individual attributes of the agents who were part of this network, and taking into consideration issues of nationality, geographical proximity, religious and familiar affiliation, the researcher is forced to defend a different perspective. In a previous chapter, it was already demonstrated that trust was not imbedded in family partnerships. In the proportions already presented in the partner’s choice statistics we find mostly Castilian agents, but also Portuguese and Italians, and everyone was related with people of other nationalities. Most of the Portuguese agents identified as New Christians were related mostly with Old Christians. One perfect example is Antonio Gomes de Elvas. In his trust relations he was connected with Portuguese, Castilians and Germans. Regarding the Spanish agents involved in trust relations in this sub-group, they were not part of the known «conversos» families, being most likely Old Christians, like Gaspar de Medina or Sebastian de la Rinaga. German Ans Pelque was most likely a protestant. If partners were chosen strategically regarding profits and business benefices, trust consolidation appears to be more related with successful and profitable business relations, than with confessional affiliation, for instance, one of the criteria usually proposed on the analysis of similarities.

Chart 10 - Trust relations contents in Simon Ruiz network, 1553-1597



Source: Bills of exchange and commercial correspondence of the Archivo Simon Ruiz.

Trust ties are profoundly embedded in trusting someone, for instance, to be a legal representative in other's behalf. Bills of exchange were the most fruitful data source in which trust and risk were at stake. It implied giving the right to another individual to act on his behalf, paying, charging, accounting and doing business for other person, sometimes demanding a commission for it. Simon Ruiz had numerous attorneys, mostly in Spanish territories, like Antonio Vasquez. On the contrary, he legally acted in Medina as Pero Godines or Juan Ortega de la Torre representative.

In a different layer, representation relationships assume 14 per cent of trust relations. This category refers to people connected as business administrators, agents and independent commissioners or even testamentary agents, those who had the obligation to execute someone's testament.. Duarte Mendes was chosen to execute the last wills of Rui Dias, for example¹⁷¹. This category of trust relationships also included sporadically the representation of someone in a concrete business: Juan Dias appears as a cattle negotiator for Simon Ruiz¹⁷² and Andre Ruiz is the representative of his brother, Simon, concerning the bought of wheat in France¹⁷³. The

¹⁷¹ Letter from Antonio Gomes to Simon Ruiz on the 11th May 1577, ASR-039.1577.042.

¹⁷² Letter from Fernando de Morales to Simon Ruiz on the 14th June 1574, ASR-023.1574.305.

¹⁷³ Letter from Antonio comes to Simon Ruiz on the 12th February 1568, ASR-008.1568.085.

former, Simon Ruiz, trust the later (Juan Dias and Andre Ruiz) to represent him in specific businesses, trusting them to do so.

Services provided to others were also supported by trust. Those relations included charging debts, paying bills, buying, selling, travelling at the service of someone, as well as acting as a guarantor and as an intermediary. In a large and non dense network, where people hardly ever knew each other and met once in a lifetime, these situations involved a high degree of interdependency and tended to be ensured by lasting relationships.

However, there was a reverse in these relations, marked by suspicion. In our sampling of commercial correspondence ten explicit relations of distrust or suspicion were found, which were profoundly related with acts of defection or cheating. Those cases occurred when expectations were not accomplished. In that sample only one of the targets of distrust did not participate in the trust graph of Simon Ruiz network, what means that distrust is directly, even if antagonistically connected with trust.

Bills of exchange present other indicator of such trust breaking. Sometimes, these documents were refused to be paid by the first payer mentioned, which was defined as a protest of the bill of exchange. Among Simon Ruiz partners things began to go wrong, mostly around 1580s and then in 1590. Even if there was not a terrible economic and financial conjuncture by that time, ten different agents had significant losses of credibility and liquidity. Bills of exchange by Francisco Morovelly were refused seven times in 1580 and through 1580 and 1582 the Genoese Cesare Negrollo was at stake by nine times. Clearly, suspicion on their liquidity unable the concretization of the payment. (SZTOMPKA 1999, 94).'

As a norm, past performances records constituted an important portfolio to strengthen relationships. If the record was good, trust ties resisted and tend to consolidate. On the opposite, if there was a record of misconduct, trust was gradually substituted by indifference, suspicion or distrust. There is a general lack of records after a broken relationship, which does not allow us to sustain the existence of a significant possibility of reestablishing a connection after suspicion and distrust. Even so, trust was sometimes maintained after short episodes of suspicion.

In this context of trust and distrust, the prospect of future profitable transactions helped to contain or even prevent dishonesty, which would result in the breakdown of trust.

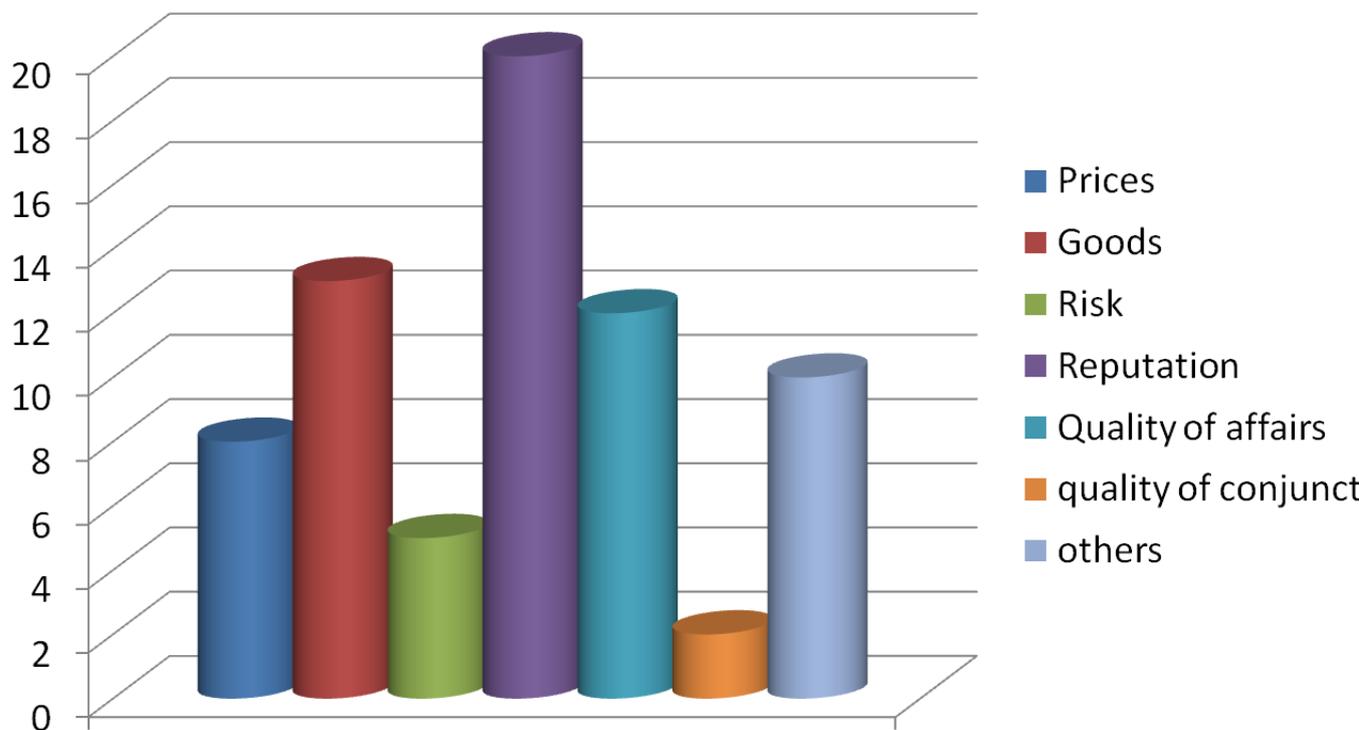
3.2. Reputation and rumor

Douglass North defended that information exchange in very dense scale could reduce transaction costs and risks. This argument was only possible if fostered by cross checking the

credibility of the sources of information (NORTH 2005). David Good sustains, in game theory, that ‘the greater the amount of communication there is between the players in a wide variety of games, the greater the likelihood of there being a mutually beneficial outcome (GOOD 1990, 36)’. This disposable information in different interactions conditions and maintains individual’s assumptions about the credibility of the interlocutors. The importance of a high degree of mutual knowledge is crucial for the development of cooperative ties. It becomes an accurate way to a social evaluation in the process of partner choice.

In the sixteenth century, geographical expansion of business demanded the exchange of information between widely spread agents, which sometimes would not even meet each other. In a network where most people were strangers and did not have direct knowledge of one another, the calculations and decisions were profoundly influenced by images promoted by the rumors circulating within it. ‘Merchants’ letters could become and in fact became connective links between trading networks. Those circuits transcended cultural barriers, which are generally presumed to jeopardize forms of reciprocity and trust perceived to be natural.(TRIVELLATO 2007, 103)’

Chart 11 - Quality of news (rumors) in Simon Ruiz’s Portuguese correspondence (1557-1580)



Source: ASR, correspondence with Portugal, from 1557-1580.

Regarding the information available in the Portuguese correspondence of Simon Ruiz it is evident that most of such information is related with reputation and reputational affairs of several partners. This dispersal information available in these merchants' letters included not only judging evaluations of another agent, but also news of cheating and defection, or justifications for the recommendation of new partners. Aslanian studying a Julfan trading network and how formal and informal institutions conditioned its activity has also perceived how the circulation of information was crucial concerning the reputation of its members. Commercial correspondence played a crucial role in enabling these merchants to judge the trustworthiness of a partner (ASLANIAN 2006).

Issues on goods, regarding the processes of buying and selling, goods' payments, transportation and deliveries appears only twelve times and it is closely accompanied by rumors on the affairs' quality: selling indigo, importing wheat at a certain time could be a good or bad business. Fombrun concerning the reflects of reputation on corporate governance has shown how images affect what we buy, how we invest, and how much we are willing to pay (FOMBRUN 1996). Rare were the topics concerning prices of goods, of insurances, exchanging rates, commissions and freights which did not transmit topics related to risks (mostly concerning with piracy) and concerning the characteristics of conjunctures which influenced trade and financial affairs. Rumors were essential in this information circulation dynamics.

A person's reputation seeks to identify '[...] not an intrinsic quality he possesses but rather the opinion other people have of him (LANG 2001, 13210).' According to social scientists it could vary along three dimensions: the first, a vertical dimension in which the reputation is located in a hierarchical scale (better or worse reputation); the second, in which the placement of the reputation is determined by the size of the audience within which a name has a currency; the third, a temporal dimension which places reputation in a group's memory in a certain chronological interval.

Receiving indirect indicators of reputation, as occurred in this merchant networks, also implied a control on the credibility of the information source. The rational mechanisms of trust imitation should also influence decisions - 'if the others who are significant to us trust that person them I will trust'. In this sense, reputation could be manipulated or falsified.

As Dasgupta explained 'reputation is a capital asset' (DASGUPTA 1988, 62). It requires personal investment, since it permits to obtain from others some distinct valuable assets, as their trust. Reputation evaluates past conducts 'of the same sort as the one we expect in the future (SZTOMPKA 1999, 71; GRIEF 1993, 530).'

In her studies in cooperative games (even if in public goods games mostly), Elinor Ostrom establishes a profound bond between trust, reputation and reciprocity. She explains that when an individual enters in a social dilemma the probability of reciprocate depends in past training, education and experience.

'The more benefits they have received in the past from other reciprocators, the higher their own initial inclinations. The more often they have faced retribution, the less likely will they be to see free riding as an attractive option. Their trust that others will also be reciprocators is highly correlated with their own norms but is affected by the information they glean about the reputations of other players and their estimate of the risk of extending trust, given the structure of the particular situation (OSTROM 2002, 49).'

Historical research on Early Modern merchant networks has already pointed out the importance of reputation as a mechanism of cooperation. Gunnar Dahl sustained that having a good name was highly influential in late medieval Genoese traders to support partnerships with other agents. Publicity in one's own wealth was meant to increase his trustworthiness, attracting money and potential business associates (DAHL 1998, 273). In this dissertation, it was already shown how rational were the choices and strategies of Simon Ruiz and his partners. Avner Grief has demonstrated that investing in one's own reputation and remaining faithful to network functioning norms was not related with moral ethics or religious beliefs but it was lead by a necessity to maintain the maximum profit they could obtain (GRIEF 2006, 62-71). Historians have been nonetheless vague in presenting empirical data and concretely analyzing the evolutionary results of reputational attributes. Their measurement is, in fact, complex and difficult. Even so, and with this purpose, this dissertation supports the general assumption presented by Lamikiz:

'[...] trade was actually sustained by something as fragile as **mercantile reputations**, which were built not only on past economic behavior but originated from, and were propagated by, collective judgment. Every aspect of a merchant's life – social behavior, external appearance, habits, religious beliefs and family life – could affect his reputation and therefore his economic activities (LAMIKIZ 2010, 183).'

Table 15 - Reputational qualities in Simon Ruiz network (1557-1580)

Reputation	Positive	Negative	Total
Financial health	17	7	24
Trading qualities	18	18	36
Personal/ Social qualities	21	4	25
TOTAL	56	29	85

Source: ASR, correspondence with Portugal, from 1557-1580.

Spread reputation covered multiple aspects of a business man life – professional profile, wealth, social and individual skills and even private life. For instance, being married meant stability and responsibility to external observers¹⁷⁴. Knowledge on these multiple individual dimensions conditioned cooperation among merchants in trading networks of the sixteenth century. Cooperation was sustained not only by businesses abilities but also by a set of different variables of one's identification and social and economic representation, which relevance could vary in time and space.

When analyzing the typology of contents of reputation in the Simon Ruiz Portuguese business network, the trading qualities or their absence appear as the most relevant ones. Expressions like «he is a nice payer/ I'm sure he will pay», «he is diligent/ rigorous/punctual», «they are good people and will do what they are asked for» appear as often as the less enchanting attributes in business. Examples of negative reputation on business, pointing to disabilities, were expressed by sentences like «he is a bad payer», «they are bad negociators», «their word has no meaning», «he has fallen in discredit», «it is better to avoid that this business passes through him», «his concept is poor and he does not have the will to make good things». Dealing with trading affairs, expressions regarding the abilities and honesty of the agents had to be quite solid. It seemed to be a generalized assumption that as much reputational information one could obtain on a certain partner, less risky would be the business. The generalized

¹⁷⁴ This was the reputational attribute of Lisbon's Flemish who financed the transportation of salt to Nantes and Rouen on the 6th September 1575, ASR-028.1575.058.

conviction was that the risk of being cheated could indeed diminish by the presence of good reputational indicators, being the opposite equally true.

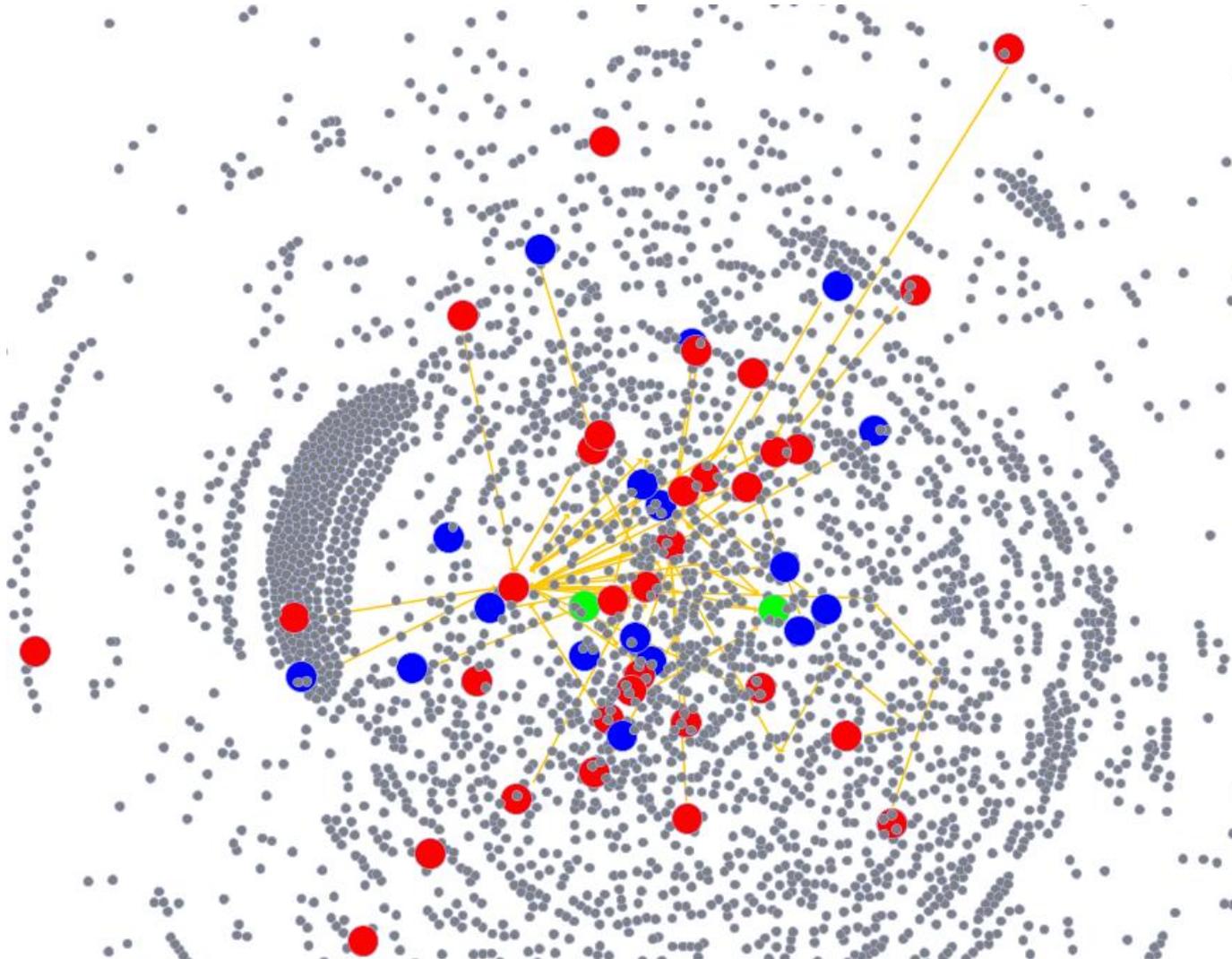
In any case, it becomes obvious the importance of information regarding the professional record of an individual. Personal quality could help equally to reinforce or to avoid cooperation with a certain agent. Interestingly, absolute negative characteristics appear rarely, even if sometimes they emerge in the correspondence: «the sellers of wheat are the worst people in the world»; the Ximenes are «people that does not care about the others». In this case, they were also considered ungrateful and malicious, as a collective entity. The mention to positive attributes were much more numerous than the negatives. Apparently, being a Portuguese was a nice thing to be, or so is considered by Hernando de Morales referring to the integrity of Jeronimo Lindo in Antwerp – ‘he is a Portuguese of those who act right¹⁷⁵’.

The norm was, however, that positive and negative signaling were based on personal qualities or inabilities, and seemed to be profoundly related with problems noticeable in a concrete relationship. They were, thus, extremely individualized. . Being an honorable individual, faithful, a loyal friend, «obeyed and respected as if he was a king», discrete and serviceable were, indeed, individual characteristics that should be remarkable for fostering cooperation. Positive attributes were also more frequent than the negative in our sample. In this framework, acknowledging personal qualities was more frequently used to sustain cooperative ties than to disrupt them.

The same could be inferred on reputational topics about the financial health of the agents. Having a multiplicity of business was a good publicity to obtain a large number of network neighbors. Being known as a very rich («largo de capitais») and smart business man or having cleaned up finances was perceived as a guarantee for commitment by coeval partners. On the contrary, suspicions on being broken, without credit, owing money to someone, registering public losses and external signs of gradual loss in one’s life style could compromise one’s performance in long-distance trade and financial worlds. In this dynamics, while good indicators of reputation should be exalted and publicized in the business world, problems should be kept away from partners and remain as much time as possible in secrecy. In this sense, reputation could be manipulated not only by the information source, but also by oneself, trying to control his own credits in the market and guarantee profitable relationships.

¹⁷⁵ Letter from Hernando de Morales to Simon Ruiz on the 30th December 1576, ASR-034.1576.003.

Fig. 26 – Reputed agents and the circulation of gossip in Simon Ruiz network, 1553-1597



Legend: Blue nodes: agents with negative reputation
Red nodes: agents with positive reputation
Green nodes: agents with positive and negative reputation
Orange edges: unweight shortest path¹⁷⁶ between the reputed agent and the spreader of reputation

Analyzing the distance between reputed agents and gossip spreaders one observes that 59,3 per cent reputation attributes are spread indirectly, without a direct knowledge of the individual in question, mostly in a two hops distance (33,3 per cent). Seldom it happens in three hops distance and becomes rarer in 4 and 5 hops (1,9 per cent each). This gradual diminishing of occurrences in more than 2 hops distance seems to confirm the idea that there is a loss of information consistency and reliability as the gossip distance increases. Milgram's experiment

¹⁷⁶ It represents the shortest distance between one node and another.

concerning small world effect defended that in many networks the typical network distances between vertices are surprisingly small (the top is six neighbors)(MILGRAM 1967). In more than 40 per cent, exists a direct link (and personal knowledge) connecting the characterized agent, which determine more reliable information. Studies evidence that homogeneous networks allow for larger levels of reliability than heterogeneous ones (MORENO 2004; BARRAT 2008, 233). Simon Ruiz's network is not an homogeneous network, since its nodes do not have equal number of partners. The reliability of reputational information in it seems to be assured by the production of information which is not distant, in terms of network dynamics, what seems to be coherent with Moreno and Barrat's assumptions.

Other characteristic evidenced by the figure above is the fact that shortest paths which are superior to one hop mostly passes by Simon Ruiz. Of course this reality is driven by a very centralized data, mainly focused on him. Considering that most of the letter's senders are Antonio Gomes, Hernando de Morales, Manuel Gomes, Carlos Nunes or António Fernandes de Elvas, he displays an important role in this informational graph. He is the best connected agent (with a higher degree) in the network and he is responsible by connections between most of all agents. This phenomena has been dubbed «funneling» by the literature experts (NEWMAN 2010, 243).

In historical research and in these pages in particular, it is impossible to judge on the veracity of reputational judgments, which were ever subjective. But if one agent chose to believe in such information, it was because he trusted the issuing agent.

Some examples in the network evidences how the dissemination of reputation attributes throughout the partners conditioned the inclusion and exclusion of agents. Alonso de Muxica in 1566 is mentioned as fallen in dishonor and discredit and bills of exchange which were accepted by him could not be raised by the beneficiary. After 1566, one verifies that this man disappeared from the business network of Simon Ruiz¹⁷⁷. Other example of such mechanism is the negative reputation of Gonçalo Vaz. He is presented as someone who «dá fastidio», as having cheated Don Luis, since he had not pay his order, and as being a debtor of Hernando de Morales. He had not participated ever more in the network activity¹⁷⁸. If cheating implied expulsion as punishment, the dissemination of negative reputational attributes ends by ostracizing the agent in a specific network.

On the contrary, the effects of a positive reputation spreading could foster cooperation among agents. Geronimo Lindo, a Portuguese New Christian in Antwerp, died in 1576. As seen before, this was a crucial year in Simon Ruiz network. In the previous year, Philip

¹⁷⁷ Confront his personal biography in <http://timelink.fl.uc.pt/mhk/dyncoopnet/id/rp-robot-71>.

¹⁷⁸ Confront his personal biography in http://timelink.fl.uc.pt/mhk/dyncoopnet/id/new_rp-robot-8666.

It declared bankruptcy and the Genoese bankers were the most affected. To substitute the lack of substantial financiers in the kingdom, Castilian merchants began to be protagonists in the «asientos». Simon Ruiz was one of them and Geronimo Lindo was the best man to pay bills in Flanders, where the Habsburg Monarchy needed money. His death forced Simon Ruiz and his Portuguese partners to find someone trustful in Flanders to pay huge sums of money. Antonio Gomes in Lisbon suggested Luis Alvares Caldeira, son in law of Lindo and nephew of Rodrigo Alvares Caldeira, a Lisbon's rich merchant. He had a trustful trading pedigree. And he became in fact one of the main Simon's agents and commissioners in Antwerp until the end of 1580's.

Reputational affairs foster cooperation in two senses: by one hand, personal and social characteristics are relevant for choosing to cooperate with someone; on the other hand, it seems determinant to exclude agents in the network. There are professional disabilities which easily ostracize individuals and unable them from belonging to a network. In this sense, the good name of an agent seemed to be crucial both to establish ties and to structure a network and to prevent the need to implement mechanisms of punishment, which are always seen as costly. Sigmund *et al.* sustain precisely the importance of reputation as a peer-punishment, stating that costly punishment may become extinct in environments in which effective reputation building (through indirect reciprocity) provides a cheaper and powerful way to sustain cooperation (SIGMUND 2010).

It is difficult to sustain whether in the sixteenth century, a business world culture of trust existed or not. What historians perceive is that trust and reputation could drive cooperation relationships forward or, on the contrary, precipitate their end. This world was not driven by random or emotional dynamics. On the contrary, it seems to be proven that choices were rational and fundamentally driven by the possibility of profitable transactions. In this world, information about events and personal profiling could either pinch trust in a relationship or increase it through an impeccable service and partner record. Oliver Williamson called it «calculativeness trust», since commercial agents were, like today, rational and opportunistic (WILLIAMSON 1993, 485).

IV. Final Remarks

Cooperation has been analyzed in the previous chapters, taken the Simon Ruiz business network as case study. The analysis has been undertaken according to concrete variables and detailed features. Now it is time for a balance regarding the (un) accomplishment of what was proposed at the beginning of this research plan. Key ideas regarding initial hypothesis and research questions need to be summed up and some final conclusions need to be put forward..

One of the nuclear goals of this dissertation was to understand how the social attributes of the agents who took part in Simon Ruiz network interfered with the constitution and evolution of the network and how its internal ruling conditioned the acceptance of external members. This analysis presumed the assumption that as the network evolved over time, predominant social characteristics of the agents vary through time.

The network had an initial tendency of growth in a low rhythm, broken around 1569, when a period of serious difficulties has shaken the ascent tendency in the network evolution. Until 1573, Castilian fairs were paralyzed preventing money circulation and payments, and investments in trading activities. The French religious war was also hampering connections with Lyon, from where the main financing of the network came. The blockage of the Scheldt and the terrifying regime imposed by the Alba's government in Flanders contextualized another main axe of the network activity. In 1574, with the recovery of the Castilian fairs, another period of network expansion flourished until 1580. The opportunity of substituting the Genoese bankers as financiers of the Spanish crown, after the 1575 bankruptcy, has opened a new cycle in the network evolution and firm's activity, which turned its main course to finance, mostly oriented to individual banking and financing. Around the end of 1580s, the network began to know certain instability in the number of affairs mostly derived from a turbulent international conjuncture. Still, the network maintained a higher number of agents within itself, higher than in the second half of 1570s decade. During the business activity of Simon Ruiz, the network showed a growing tendency and a great resilience to the changes in economic conjuncture, revealing an extraordinary character and the ability of Simon as a business man.

The hypothesis of business networks having a dynamic life cycle was verified. Network evolution was profoundly conditioned by economic, political and military conjunctures which had not only economic consequences, but also social effects. They result in different trends and conjunctural moments of inclusion or exclusion of agents. Even if their belonging to a certain group counts, the partner choice seems to lay clearly in individual characteristics. The firm

internal circumstances also could inflict a new course on business strategy and, so forth, in network evolution. The life cycle of such a personalized network, the one of Simon Ruiz, resisted to his death and his progressive withdraw of the company's affairs, but did not have a much long existence in the hands of his nephew.

Revealing a rational choice criteria of the agents involved, the percentage of old partners present along the analyzed time periods is rather small, increasing however in times of market uncertainty. Social characteristics as nationality – as an indicator of group identity and synonymous of a specific reputation –, geographic location and reputation are crucial in the choosing process. Agents were preferred if the national group had financial stability and wealth, as occurred with the Genoese in Spain until 1575 bankruptcy, for example. Prove of that is the fact that, after that event and even if they recovered from the damage provoked by the Spanish failure, Simon never trusted directly on them again and the presence of Genoese in the network decreased in percentage. On the other hand, a strategic placement in relevant commercial and financial places and the individual connections maintained displayed a fundamental role in attracting neighbors. Primordial financial and commercial axes evolved through time within the network and so did agents geographic location: first, one assists to the prevalence, in the network, of the axe Medina-Lyon, then Medina-Antwerp, Medina-Florence and Rome and finally Lisbon-Medina-Antwerp-Piacenza. After 1574, when there was a clear business orientation of Ruiz's company for finance, a deeper dependence from Iberian bankers grew and persisted until the end of Simon Ruiz life.

Reputation was a major individual attribute to ensure inclusion as the lack of it was a factor of exclusion of agents from the network. Negative reputation focused in professional disabilities and personal attributes guaranteed networks expulsion, while inclusion of individuals apparently depended more from a combination of news on financial health, business ability and personal and social characteristics of the agents.

Kinship was not a basis of the launching network activity. Business connections with familiars existed, in Simon Ruiz network, in two situations. The first, when his brothers were used to represent Simon in a certain location or when they formed a strategic partnership. The second situation, applied to a second generation of blood ties, appeared as a help in hand to their professional growth. As Schulte explains, living under the reputation and protection of a certain family member was a mean to gather trustworthiness and reputation among the elder's partners (BEERBÜHL 2008, 4). If in the first situation kinship association emerges as a strategic business choice, and those family members were seen as equal partners in a profitable partnership, the

second points more to family solidarity, the elder trying to favor and recommend the younger and keep the business in the family..

In this dissertation it was also proved that ethno-religious and national frontiers did not exist in business cooperation. Even if the religious background of our main character is difficult to classify, it is sure that he had businesses with Old and New Christians (mostly Spanish and Portuguese) and even with Protestants. This conclusion corroborates the tendency of a recent historiographical discourse pointing out to the existence, in the Early Modern Age, of cross-confessional and cross cultural trade. On the other hand, national rivalries, mainly in conflict situations, were not considered by the agents participating in Simon Ruiz network. For example, Flemish merchants continued to coordinate acts of money transactions between Antwerp and Medina del Campo or Madrid with Spanish merchants, even in the serious peak of the conflict in the town, such as the period of 1574 and 1589.

Historiographical research has also been insisting in linking networks of merchants according to identity patterns. The theoretical assumption is that religious affiliations or being part of a certain denomination or national group reduced uncertainty in business's associations (BEERBÜHL 2008, 7). In the case study of Simon Ruiz network, continuity of different types of ties between the same agents seems to exist and help to foster cooperation, trust and long lasting business partnerships. However, the multiplicity of ties observed does not seem related with social identity parameters, such as belonging to a similar national, religious, ethnic, social, economic group, but it is sustained by individual interests and professional similarities, such as trading in certain products or commercial routes. This dissertation does not question the validity of studies which sustain the opposite, but it does not seem to be applicable to this case study. Eventually this could be a trend developing after the sixteenth century or applying to networks with different dimension, wealth and volume of transactions. It might happen that scale matters: scale of wealth, scale of trade specialization, scale of risk, dimension of the network. According to our findings, endogamy in this economic and financial network was not restrictive, as it was hypothesized in the beginning of this dissertation. In fact, it did not reveal as determinant, neither in an early stage of business activity, neither at the end of it.

Regarding cooperation, one has questioned which mechanisms promoted it. Even if kin endogamy was not prevalent in the network dynamics, parents were engaged in cooperation ties, in all levels of cooperation. Being family members a small part of the total number of partners, the mechanisms of kin selection was rarely issued in this specific case study.

The most frequent mechanism of cooperation observed in directed graphs was the indirect reciprocity. It implies that cooperation derived not only from relationships between direct

cooperators, it was promoted as well by attracting neighbors of each one neighbor to interact with him, evolving to a mechanism of network reciprocity. Indirect reciprocity was only possible because reputation was an important factor for fostering cooperation. If an agent collaborated with someone else, he was willing to have a positive reputation. This was critical in order to be recommended to start a new cooperative relationship. Also associated with indirect reciprocity and reputation spreading was the mechanism of signaling. Reputation of one individual, as one have seen, would not be the responsibility of others only, but could also be manipulated by himself (ROCKENBACH 2011).

Direct reciprocity, on the contrary, had a much selected use in this network. This mechanism was used in cooperation relationships only in long lasting partnerships and with whom were performed very frequent mutual acts of cooperation. Altruism was definitely not part of the cooperation relationships under scrutiny. Network cooperation was only business interested driven.

The reverse side of the cooperative equation, cheating and defection, had different effects on the evolution of cooperation in this trade and finance network. While defection was perpetrated by usual and regular cooperators and was casuistic, the prevalent norm in the network, in these cases, was to maintain cooperation, because a past record of the partnership showed bigger profits than the damage inflicted by those episode of non cooperation. Defection was also used as a punishment behavior to reciprocate defection of the other partner.

Cheating, however, had more harmful consequences. Punishment functioned severely in those cases in two forms: the offender exclusion of the offended group of partners; and a negative reputation spreading, which usually conducted to a general boycotting of his business activity in the whole network, leading to an economic ostracism. Punishment mechanisms were generally promoted by the breakdown of norms, but its intensity was related with the harm of the degree of trust deposited in that concrete relationship.

Norms associated with the creation of cooperative ties were less evident in the selected documental corpora. Still, reputational positive attributes concerning social and personal characteristics of the agents was a determinant factor to foster cooperation, if the information source was also a trustful individual. The same procedure was maintained whenever one agent, using the primary level of cooperation, communication, recommended someone to be part of the network.

Considering cooperation in this trade network of the sixteenth century, which factors conditioned its emergence and evolution?

First of all, events and conjunctural tendencies, which could condition the decisions on what was the most profitable business strategy to follow and who were the most favorable cooperative partners. Individual business characteristics as reputation, accumulated capital to invest (wealth), individual connections or network neighbors (concerning the familiar affiliation or other social typology of connection, as friendship) and past cooperative and business successful record with other agents. But cooperation was also fed by itself. Recommendations, reputation spreading and advices on other partners' business activities were part of the contents of cooperative ties and those profoundly affected decisions on the establishment of new links.

Trust contributed, in this case study, significantly to foster cooperation. It is remarkable that half of the agents connected in collaboration ties also had established explicit trust links within themselves. Consulting the overall correspondence of Simon Ruiz Company this percentage of the overlap between trust and cooperation relations would probably be enlarged. Trust was profoundly correlated with acts such as performing in other's person behalf, implying taking important and risky decisions on another's business, sometimes even without consulting who he was representing.

Generalization is, however, a risk: as Braudel defended, Early Modern business networks were informed by a variety of situations and evolved according to their scale and to the hierarchies between networks and within the own network (BRAUDEL 1985, 133-146).

This dissertation seeks to present a new approach on the history of Early Modern business networks, especially in long-distance trade. Its contributes arise from an analysis centered on the topic of cooperation, integrated in an interdisciplinary body of knowledge which uses a common language and methodology regarding the study of human and even animal cooperative behaviors. In an analytic grid which combines historiographical tendencies and models and vocabulary of other sciences, this dissertation concludes that one agent could perform simultaneously the role of cooperator and defector in a same link and defecting did not compromise a lasting relationship, tendency which seems to be transversal to the whole network. And things tend to evolve in a dynamic way: yesterday a competitor, today a cooperator, tomorrow a cheater.

. On the other hand, business cooperation did not know group, social, space or any other kind of boundaries. One of the most interesting conclusions of this thesis is that a high degree of rationality was involved in cooperative business affairs, which is not always clear in human cooperative behaviors. The network analysis perspective and the economic agency theory has enable the construction of a methodology, historically based, which proves that the establishment

of ties was highly dependent on the information between individuals and about individuals and the business strategies of the company.

However, this work presents some fragilities. The greatest is the lack of comparative indicators between our case study and the overall panorama of business networks acting in Europe in the same time period. The absence of historical studies with a similar theoretic and methodological approach and the impossibility to share analogous research questions has preclude the presentation of generalized and common conclusions on the cooperative activity of self-organized trading networks in the Early Modern period.

The research is mainly based in the documental corpora of Simon Ruiz company archive, which bias the conclusions presented and points to a specific network structure dynamics, which one cannot assume as being generalized in the time period under study. However, if one thinks that each merchant had, in his time, similar private records, one can image, in the future, with the multiplication of case studies, that this star shaped network will arise linked to others, all contributing to larger networks. Notwithstanding, it is impossible in this work to have a clearer notion of such reality. The lack of surviving similar merchant archives, the brutal quantity of documents presented in each one of the existing ones and the restrictive academic deadlines - all together conditioned this research and oriented it to the analysis of only one case study.

In the scope of this case study, it would be advisable to cross the gathered information with the one presented by other documental corpora regarding the same agents. Notary records of the great centers of commercial and financial activity of this firm's partners, along with some central states records on the agents involved in public finance should have been targeted by a more extended empirical research. It was, however, impossible to pursuit it in the scope of this academic work.

In this cross boundaries world of cooperation and rivalry a lot of research has still to be done. How individual business agents self positioned in a world full of global economic problems? Which partners were chosen to cooperate and why? How the existence of national overseas empires and its politics of economic exploitation conditioned or motivated trading and finance cooperation in the Early Modern world? These questions lead to a research plan for a lifetime, not only individual, but necessarily involving other authors spending their research time studying global business affairs in the Early Modern world.

This doctoral dissertation has left its author a bitter taste. There were so many issues to explore, so much information to collect. Still, we cannot forget that this research was part of a collective team effort that took more than three years to accomplish. This is, in that overall research plan, a small contribution, Only more time and resources would make it possible to

complete, to mature and to improve it. We are certainly sure that the end of this dissertation and the formal closure of the DynCoopNet project does not mean the end of a challenging research plan involving informal self-organized trade networks in the First Global Age ...

V. SOURCES and BIBLIOGRAPHY

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