Chapter 2
Reputation, Trust and Culture – the Network Structure of Hanseatic Trade and its Benefits

Hanseatic Trade and its Historiographical Evaluation

In the literature on the late medieval German Hanse, the business practices of Hanseatic merchants are supposed to have been backward. This vigorous claim of backwardness is based upon two features that characterise the specific way the merchants of the Hanse operated their trade:

Firstly, and most visibly, the trade between Hanseatic merchants was organised differently in comparison to commercial exchange elsewhere in those days. The type of hierarchical-bureaucratic corporate organisation, which seems to have been the common pattern employed by Italian merchant bankers and trading businesses from Upper Germany, can rarely be found along the Baltic shores. For Werner Sombart, the trading practice of the Hanseatic merchants had only a ‘craft-like’ character. The organisational mode of the Hanseatic businesses instead typically consisted of mutual transactions between two partners operating at distant locations, with each partner selling the other partner’s goods. Very often these partners were related to each other by kinship or they were linked through friendship relations. In many cases, their commercial relationships usually were not defined by any written contract.

Secondly, a cursory glance suggests that by that time the merchants of the Hanse had fallen considerably far behind the state-of-the-art business practices and techniques such as the double-entry bookkeeping, the use of bills of exchange and buying on credit. These techniques had been invented in Italy and were employed by Italian firms and merchant bankers, which also were trading in northwest Europe, and later on these innovative commercial

means were successfully implemented by firms from Nuremberg and Augsburg. Although Hanseatic merchants occasionally bought on credit\textsuperscript{77}, these newer business practices did not really become their standard techniques.

However, the main objection to the claim of a Hanseatic backwardness in the fourteenth and fifteenth centuries can be raised on the grounds of the Hanse’s economic performance and the commercial success of its merchants. Despite sticking to business practices that were already outdated, the merchants of the Hanse were very successful indeed.\textsuperscript{78} Not only were they able to practically monopolise all trade in the Baltic and North Sea areas during the late Middle Ages, but they could also secure their domination of the trade with a fairly wide range of products until way beyond the turn of the fifteenth century. Moreover, only a few of the seemingly more modern firms from Upper Germany could really establish long-term businesses in the Hanse’s commercial realm in the Baltic and North Sea areas.

Nevertheless, in recent decades this very special and unique structure of Hanseatic trade and the paradigm of ‘backwardness’ somewhat obscured most researchers’ views of the Hanseatic merchants’ success in the Baltic. A pessimistic as well as an optimistic position can be distinguished in the literature: the research of those who argued in favour of backwardness was mainly focussed on the comparison of the Hanseatic business style with the Upper German firms’ type of bureaucratic organisational structure. In the tradition of the writings of Max Weber\textsuperscript{79} these authors misleadingly assumed that the hierarchical-bureaucratic organisation was the ‘normal’ and indeed progressive form of organisation. Their according conclusion that Hanseatic merchants operated in an old-school manner was a quite logical step under consideration. In contrast to this, many attempts were made by those who denied a Hanseatic backwardness in trading practice, to show that commercial exchange between Hanseatic merchants was very special indeed, and that the claim of backwardness was wrong and a corresponding

\textsuperscript{79} Cf. Weber 1889; ‘1980.
xenophobia of Hanseatic merchants never really existed. As a result, the literature has thus far failed to classify the typical elements of Hanseatic business transactions in terms of and with concepts of present-day theory of organisation. By arguing along the lines of ‘backward vs. non-backward’ and ‘non-modern vs. modern’ modes of organisation, the analysis of the functional mechanisms that drove the very specific organisational structure employed by the merchants of the Hanse was often neglected and faded out of sight, as did possible interrelations between this particular structure and its economic performance.

In using concepts of organisation theory, transaction cost theory, principal-agent-theory and game theoretical methods we attempt to analyse this particular organisational structure. We also aim to explain how coordination within such a system of trade was achieved, and especially, why merchants at distant locations consented to repeated cooperation, very often without relying on written contracts.

The Network Structure of Hanseatic Trade

Forms of Commercial Exchange and Cooperation

In general, business transactions between the merchants of the Hanse were handled on a partnership basis. Several juridical forms of cooperation were in use: within the so-called wedderleginge (labelled also kumpanie or vera societas) two merchants cooperated, one of them traded goods whereas the other only contributed part of the financial capital the first merchant used for his trading operations. Profits were shared in such partnerships. In contrast, the so-called sendeve was a sort of commission business. A particular merchant – the commission agent – sold the goods he had received from another merchant by order and on behalf of the partner who had instructed the sale and who had sent the goods to the commission agent, with profits and risks remaining with the sender. Yet, by far the most frequent and

thus most important form of commercial transaction between Hanseatic merchants was a cooperation of two traders, which was somewhat different from a commission business and can be labelled as a ‘reciprocal’ business. In such reciprocal partnerships each partner sold the other’s goods, but in every case the profits were pocketed by the sender while the risks remained with the partner who operated the sale. Of course, simultaneity of reciprocal sale operations was not necessary. The striking feature of this sort of mutual transaction is the fact that it was usually handled without any written contract. Neither written long-term agreements between two merchants, nor occasional transaction-specific written instructions existed. Even during the sixteenth century this form of reciprocal cooperation was prevalent among Hanseatic merchants, a fact which can be proved with the example of Bertram Bene from Oslo and his trading partners of the Kron family from Rostock.

Another feature of Hanseatic commercial exchange worth mentioning is something that in organisation science is known as ‘cooptition’. This term is a coinage of ‘cooperation’ and ‘competition’, and recently came in use in the theory of network organisations. Since the reciprocal commercial exchange of Hanseatic merchants allowed each of them to cooperate with more than one trading partner and thus to operate potentially conflicting sales, in a group of Hanseatic merchants, competition can very well be found alongside cooperation. At least in the late Middle Ages the Hanse never really forbade this sort of competition. An example of an explicit prohibition of competition between trading partners is that of the company formed by Hermann Carsten, Gert vom Brocke and Heinrich von Kampen in Lübeck in the middle of the sixteenth century, which nonetheless is atypical in the sense that it was one of the later Hanseatic companies for which the bureaucratic-hierarchical style had already been adopted.

86 Cf. Sprandel 1984, p. 28.  
Firm size and Network Organisation

A vast majority of Hanseatic businesses were self-employed merchants, family businesses and small-scale firms. Because of their small size, complex hierarchical structures are seldom, if ever found among them. The company of *Falbrecht-Morser-Rosenfeld*⁸⁸, which operated in the early fifteenth century in England and Hungary, the sixteenth-century business-house *Loitz from Stettin / Szczecin*⁹⁰, and the aforementioned company of *Carsten-Vom Brocke-Von Kampen* from Lübeck are three of these rare cases. However, the simple organisational structure of small-scale firms is only part of the trading pattern that can be observed in the Baltic and the North Sea in the late Middle Ages.

A more complex structure of commercial exchange emerged from the interactions between such rather simply structured firms. Hanseatic merchants formed trade networks of different sizes, varying density and endurance. These commercial networks were medium-term or long-term cooperations between legally independent merchants who traded goods with each other. A spatial specialisation – as it is called in organisation science – was achieved insofar as traders from different places in the Baltic could feed many different products and goods into such networks. It is crucial to distinguish Hanseatic commercial networks from the ‘networking’ activities of other merchants and firms in the late Middle Ages, for instance families from Upper Germany⁹⁰ or Italian firms.⁹¹ It is obvious that the *Fugger* and *Welser* from Augsburg also possessed large kinship and friendship networks, but they used them primarily to control production processes and to influence political issues from the headquarters of their respective firms in Augsburg. From very early on, a hierarchical-bureaucratic organisation stood at the centre of their business operations, with numerous employed agents who represented the firm at every market of importance. In contrast, Hanseatic merchants as (in principle) legally independent economic units employed each other as commercial agents in distant places, and their trade networks then evolved as a result of the

---

commercial exchange relationships that were handled in this particular manner and consisted of firms of quasi equal rank. Nevertheless, these networks did not possess a formal or legal definition, they were lacking in formal hierarchies and as a whole showed only a small degree of formalism. Naturally, some sort of headquarters was also missing, meaning that all trading activities had to be coordinated by means other than hierarchy. Thus, from an economic perspective, the Hanseatic trade networks were not primarily networks of persons, but rather they have to be considered as networks of firms.

Figure 2.1: Bureaucratic-hierarchical Organisation vs. Network Organisation

<table>
<thead>
<tr>
<th>STRUCTURE</th>
<th>BUREAUCRATIC-HIERARCHICAL ORGANISATION</th>
<th>NETWORK-ORGANISATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>FORMALISM</td>
<td>clearly defined structure, hierarchical levels, subdivision into areas of competence</td>
<td>loose and flexible connecting up, vague formal boundaries, lack of hierarchical levels</td>
</tr>
<tr>
<td>FLOW OF INFORMATION</td>
<td>flow of information is directed towards the centre</td>
<td>low degree of formalism</td>
</tr>
<tr>
<td>COORDINATION</td>
<td>hierarchical, coordination through instruction and control</td>
<td>lateral flow of information</td>
</tr>
<tr>
<td></td>
<td>“zero-trust organisation”</td>
<td>non-hierarchical, coordination through reputation, trust, culture and responsibility</td>
</tr>
<tr>
<td></td>
<td>“total-trust organisation”</td>
<td></td>
</tr>
</tbody>
</table>

Characteristics of the ideal types of bureaucratic-hierarchical organisation and network organisation.
Source: Authors’ own drawing.

Hence, it follows that the organisational form of Hanseatic trade networks cannot be judged by the standards of Max Weber’s nineteenth-century-style model of bureaucratic organisation.\(^92\) As a medieval example of the modern paradigm of network organisation\(^93\), this form indeed fits into the

---

\(^92\) On the effect of Max Weber’s theories on organisation science see Hauschildt 1987, pp. 3–21.
conceptual framework of present-day organisation theory. A ‘network organisation’ is defined as a loose cooperation of legally and economically independent entities. This kind of inter-organisational network possesses neither hierarchical levels nor is it controlled by a central authority, so that cooperation between network members is thought to happen only by voluntary and flexible couplings. Such inter-organisational networks are characterised by a minimal degree of formal definition (see Figure 2.1).

This pronounced network pattern of commercial exchange between Hansards emerged in the period of demographic expansion before 1300, when many towns in the Baltic were founded. Through a simulation approach – a methodology which can partly compensate for the significant lack of written sources on Hanseatic merchants in this early period of the Hanse – it can be shown that a slow transmission of information and high transportation costs in the Baltic as well as the exclusive trade privileges held by Hansards at the markets of London, Novgorod, Bruges and later on at Bergen, were all important determinants in the formation of trade networks.

*Overlapping Circles of Family and Business*

The Hanseatic commercial networks were embedded into a larger social network, and cohesion between merchants appears to have been fostered by all sorts of other personal ties, a feature that will be discussed in more detail in Chapter 3 of this volume. Since much of the Hanseatic trade was operated by self-employed merchants and small-scale family businesses, the trade network consisted of several dyadic relationships between merchants residing all over the Baltic and the Kontore of London, Bruges, Novgorod and Bergen. The structure and composition of such commercial networks can be determined by researching account books, letters, or, as will be shown in Chapter 3, wills. With the exception of wills, there are not many written records about Hanseatic merchants’ commercial practices available. For *Johann Pyre* from Danzig / Gdańsk, *Vicko von Geldersen* from Hamburg and *Hermann* and *Johann Wittenborg* from Lübeck, account

---

books have been preserved. The account book belonging to Johann Pyre, for instance, covers a period of approximately 32 years. Moreover, account books and letters from the Veckinchusen family give an idea of what a Hanseatic merchant’s business life must have been like in the early fifteenth century. Following these sources, the number of a merchant’s trading partners could reach a maximum of 40 during a period of approximately 30 years, and cooperation with certain partners could last up to 22 years. If a single merchant cooperated with approximately 40 other merchants, one could imagine that the total size of commercial networks must have been much larger, assuming that the density of the whole network was not complete. To a certain extent, it is indeed an analytical drawback that sources do not provide enough information to calculate a complete trade network’s density or the degree of centrality of each merchant’s position within such a network. However, it is possible, as it has been shown in the case of the Veckinchusen family, to take an ego-centred network approach and try to reconstruct only the part of an exchange network that belongs to a particular merchant.

The rare source material allows for some general conclusions, at least. The total number of a merchant’s trading partners can be divided into (at least) three groups: family members, friends and occasional partners. For each merchant, the relative position of all trading partners can be plotted on circles surrounding his own position in an ego-centred network (see Figure 2.2a). Core partnerships have a high frequency of mutual exchange and they existed for longer periods of time.

---

In theory, family bonds and core partnerships coincide significantly. In practice, there seems to be strong evidence from the surviving sources that core partnerships were often relationships of trade with family members and friends. At the beginning of the fifteenth century, for instance, Hildebrand Veckinchusen traded from Bruges with some of his friends as well as with some of his relatives, including his father-in-law Engelbrecht Witte in Riga, his brother Sivert in Lübeck – who stayed in Cologne during the period of 1408 to 1419 –, his other brothers Cesar and Hans in Riga and Reval / Tallinn, his brothers-in-law Klaus Swarte in Dortmund and Hildebrand von Bokel in Dorpat / Tartu, his son-in-law Peter van den Damme in Lübeck, and finally his nephews in Lübeck, Reval / Tallinn, Dorpat / Tartu, and even in Venice (see Figure 2.3).
Once established, a commercial network became increasingly dense (see Figure 2.2b) as it was a common strategy of merchants to make friends out of occasional partners and relatives out of friends. *Engelbrecht Witte*
from Riga, the later father-in-law of Hildebrand Veckinchusen, married his daughter into the Veckinchusen family with a clear aim of becoming friends with them.\textsuperscript{102}

Coordination of the Network Trade System

The Problem of Coordination

To describe the structure of the late medieval Hanseatic trade system, we use the model of network organisation. By choosing a network organisation for their commercial exchange, the merchants of the Hanse were able, as shown above, to solve the so-called problem of organisation. An additional organisational feature of the network trade system to be investigated in more detail is the aspect of coordination. Hanseatic merchants obviously also had to overcome a coordination problem pertaining to the Hanse’s internal trade. In network organisations like the one formed out of the multiple business partnerships of Hansards, often problems such as free-riding and cheating arise\textsuperscript{103}, especially if a considerably large number of members are involved.\textsuperscript{104} With a lack of written contracts, it seems as though it must have been quite easy to participate in a commercial network of merchants and to take personal benefits for free. In principle this was possible if a merchant refused to contribute substantially to the diffusion of goods within the network. A merchant, for example, would sell another merchant’s commodities and pocket the profit, without sending the goods back for recompensation, as was usually done in reciprocal trade. It is thus necessary to analyse the mechanisms by which the cooperation of Hanseatic merchants was achieved and by which traders were motivated to generally play fair, even though there are, of course, also examples of fraud and betrayal.\textsuperscript{105} However, such a fair exchange between merchants within the network organisation could be guaranteed by various mechanisms, these being reputation, trust and culture, all of which facilitated and stabilised cooperation and thus had a coordinating effect within the Hanse’s net-

\textsuperscript{102} Cf. Irsigler 1985, p. 81; 1989, p. 530.
\textsuperscript{103} Cf. Tesfatsion 1997, pp. 495–498.
\textsuperscript{104} Cf. Diekmann 1992.
\textsuperscript{105} See e.g. von Ranke 1925, p. 250; Selzer / Ewert 2001, p. 154.
work trade system. How these mechanisms worked and why exactly these means were of significant importance can be delineated with the help of principal-agent-theory. This theory is commonly used to identify difficulties that typically arise in agency relationships. The relationship between a principal and a commissioned agent can generally be analysed in terms of an agency problem.\textsuperscript{106}

\textbf{The Agency Problem}

The spatial segregation that usually existed between sedentary traders in the late Middle Ages always gave rise to an agency problem. Such a problem evolved because merchant $A$, who wanted to sell his goods at a distant market, for example, not only had to deal with shipping the goods to this market, he also needed somebody on site – a merchant $B$, for instance – as a sales agent. Merchant $B$ would thus become a sort of factor for merchant $A$, representing merchant $A$ in commercial affairs at his home market, which for merchant $A$ was a foreign market. Thus, merchants $A$ and $B$ entered into an agency relationship, where merchant $A$ took the position of a principal, while merchant $B$ serving as his factor took the position of an agent. This could become problematic, especially if merchant $A$ was not able to effectively judge the commercial abilities of merchant $B$, or if he was inadequately informed about the personal objectives of merchant $B$. In addition, merchant $A$ would also not be able to monitor merchant $B$’s concrete actions, at least not without a great deal of effort and extremely high costs. In terms of the principal-agents-theory, for the principal (merchant $A$), the agent (merchant $B$) possessed ‘hidden characteristics’, ‘hidden information’ and ‘hidden intentions’, and his commercial behaviour which can be monitored only insufficiently by merchant $A$ was a kind of ‘hidden action’. As a consequence, information was asymmetrically distributed among the two merchants – the principal and the agent –, and it would have been rational for merchant $B$ to use this information asymmetry to his own advantage and to the disadvantage of merchant $A$, either by lying or by cheating.

This sort of an agency problem was rather typical of pre-modern trade in general, and it was largely fostered by the huge distances that usually had to be bridged by medieval and early-modern trade, as well as by a slow transmission of information and by a lack of legal institutions capable of protecting merchants’ property rights from any offence. In this respect, the commercial exchange of Hansards can be considered as a rather typical example. Hence, medieval merchants, in order to cope with the agency problem, had to develop and deploy institutions through which they could protect themselves against all risks that could possibly stem from such an asymmetric distribution of information among commercial partners operating in distant locations. Both the appearance of risks and potential strategies to minimise these risks can be analysed within a game-theoretical framework.

A Game-theoretical Analysis of Medieval Commercial Exchange

The basic structure of the agency problem which often appeared in long-distance trade is usually modelled as a game. To this end, Avner Greif uses what is known as the sequential prisoners’ dilemma game (see Figure 2.4). In this representation of the agency problem, the choices available for the two players (merchants) are assumed as simplified binary strategies, and utility values attached to each possible outcome of the game represent the consequences of the players’ respective decisions. The structure of such a one-shot game of exchange is very simple. The player who draws first (merchant A as principal) can decide whether or not he wants to employ merchant B as an agent. If no commission is awarded to merchant B, neither of the players wins or loses anything. In the case of a commission, merchant B decides whether he will play fair or whether he wants to betray merchant A. If merchant B is playing fair profits are divided between them, with $\lambda P$ and $(1-\lambda)P$ denoting the shares of the profit for merchant A and merchant B respectively. By defecting, merchant B can keep all profits for himself, whereas merchant A would then not only have to bear the costs of the transaction, such as the costs associated with the shipping of the commodities, but he would also have to book a loss. It should be noted

---

that any negotiation between principal and agent about the distributional scheme of profits is not part of this game.

Figure 2.4: Game-theoretical Model of Medieval Commercial Exchange

One-shot one-sided sequential prisoners’ dilemma game to model bilateral commercial exchange: $P =$ profits of sale; $C_A =$ costs of shipping goods to merchant $B$; $0 \leq \lambda \leq 1 =$ $A$’s percentage share of profits.
Source: Authors’ own drawing adopted from Greif 2000, p. 255.

Common assumptions made in such a one-shot game of exchange are that both players are anxious to maximise their personal benefit, that the two act strategically, that the game is played for a single round only, and finally that there is no authority able to help merchant $A$ to react effectively to any fraudulent behaviour against himself committed by merchant $B$. Given these assumptions concerning the players’ behaviour, and given these rules of the game, the outcome is easily predictable. If merchant $B$ wants to maximise his personal benefit, and if he acts strategically, thus having certain expectations about merchant $A$’s choice of strategy, he will always choose the fraud option because by this he will achieve a greater benefit – $P$ instead of only $(1-\lambda)P$ – than he would if he acted honestly. Merchant $A$, who is also assumed to act strategically in order to maximise his own benefit by trying to minimise the risk of being betrayed by merchant $B$, will always anticipate merchant $B$’s rational behaviour correctly, and therefore he will never commission merchant $B$. As a consequence, under such restrictive behavioural assumptions, there would be neither a transfer nor exchange of commodities, and thus no long-distance trade would ever happen. Not awarding the commission by merchant $A$ and a fraud by merchant $B$ would thus be the respective best responses of each of the players to the rational
behaviour they expect of their counterpart. According to Avner Greif such an outcome of this game, which is a Nash-equilibrium\textsuperscript{108}, has to be considered as the ‘The Fundamental Problem of Exchange’.\textsuperscript{109}

Even if these assumptions about the behaviour of the two merchants appear too restrictive, or even unrealistic, they still help to clearly accentuate the necessary constraints of long-distance trade and the agency problem associated with it. With such an abstract formulation of the game, based on the individual rationale of traders, it is possible to explain the shape of the historically observed contractual arrangements in long-distance trade which were found to cope with exchange problems. Yet, the existence of long-distance trade all across medieval Europe proves, in a way, that it was possible to overcome the fundamental problem of exchange. However, what conditions for long-distance trade between merchants needed to be established? And which institutions were needed to enhance fairness among merchants once trade had been established?

Firstly, in order to make the principal (merchant A) even consider awarding a commission to a potential agent (merchant B) as an option, the agent must signal a sufficiently high degree of trustworthiness to the principal. Trust (on the part of the principal) and reputation (on the agent’s part) can be regarded as two sides of the same coin, and consequently, trust and reputation are fundamental prerequisites for establishing trade relationships.

Secondly, in the event of a commission being awarded to merchant B by merchant A, a well-defined institutional framework would be necessary to offer merchant B incentives to act honestly. With the help of such an institutional framework, sanctions against merchant B can be enforced in the event of dishonest or fraudulent behaviour. Enforcement can, for example, be achieved by formal contracting, but this would in turn require additional institutional regulations, provided by a legal system, for instance, or by certain authorities capable of effectively executing any sanctions against individual merchants. If the scope of analysis is shifted from bilateral to multilateral trade relationships, a setting that existed within the Hanse’s

\textsuperscript{108} By definition a Nash-equilibrium is characterised by mutual best answers of all players in a game to the strategic choices of all other players. Cf. Kreps 1990, pp. 28–36.

\textsuperscript{109} Cf. Greif 2000.
internal trade networks, it becomes necessary to also consider the problem of ‘free-riding’. This would be a much more realistic approach to the history of systems of trade. Free-riding occurred because individual merchants tried to use club goods or even public goods that were provided within a network for free. An example of Hanseatic club goods are the Hanse’s trade privileges at the Kontore by which only Hanseatic merchants gained access to the market, while the standardisation of weights and measures is an example of a public good available within the Hanse. To prevent traders from free-riding, or to make it more difficult at least, it would be necessary to create appropriate institutions through which fair behaviour could be rewarded.

Finally, as shown above, the principal potentially evokes the risk of the agent’s dishonest and defrauding behaviour.110 For a classification of contractual risks a principal can be faced with, it is crucial to consider when exactly contract modalities such as schemes of risk-taking, cost-bearing and profit-sharing between the principal and agent are negotiated. The design of the incentive structure and the efficiency of the processing of a commercial transaction are directly affected by these modalities, and it makes a great difference whether modalities are negotiated ex-ante or ex-post, because either way shapes the information asymmetry between principal and agent differently. If, on the one hand, the potential agent is to obtain a fixed price for a commission business, during negotiations he (in this case merchant B) can pretend that his costs are higher than they really are, and book the difference as profit while the principal (in this case merchant A) would actually have to pay too high a price. Consequently, merchant A being the principal would make an ‘adverse selection’ of agents, thereby allowing the agent (merchant B) to make use of his better knowledge about his personal abilities to extract an information rent. On the other hand, if the distribution of profits among commercial partners is only defined after the execution of the commission business, as is characteristic for a cost-plus-contract, the principal merchant A, with hindsight brought by the result of a commissioned sale, cannot be sure that the agent merchant B has acted exclusively in his (the principal’s) best interests. If the agent is

110 For an overview of the different considered types of contractual risk see e.g. Ripperger 1998, pp. 63–67; Wolff / Grassmann 42004, cc. 1587–1590.
fully reimbursed for the costs of executing a commission business, he has no reason to keep these costs down. In this case there is also the risk that the commissioned sale will be too expensive and, in addition, might not be executed in merchant A’s best interest. This contractual risk is referred to as ‘moral hazard’. If the principal finally binds himself to a particular agent by making specific investments when awarding a commission, the agent can also exploit the principal’s commitment to his own advantage, for instance, by making higher financial demands to the principal, which would bring the agent into a so-called ‘hold-up position’. Again, in the two latter cases, the agent would be able to exploit an existing asymmetry of information for his personal benefit.

The Viability of Hanseatic Reciprocal Trade

These insights into the agency problem and its repercussions on exchange in general as well as the results of the analysis of a simple Greif-type one-shot trading game allow us to evaluate the contractual scheme of reciprocal trade that was commonly agreed upon by the Hanseatic merchants, and that stood at the core of the Hanse’s network organisation of trade. It now becomes possible to derive the extent to which this very special contractual scheme was prone to the aforementioned contractual risks, and why Hansards in most cases were able to minimise or even avoid such risks. Thus, the fact that reciprocal trade was a viable solution for Hansards to solve the agency problem arising in long-distance trade can also be considered as proof of the efficiency of the Hanse’s network organisation of trade. Furthermore, such an analytical framework generally paves the way for a comparison of different contractual schemes used in medieval and early-modern long-distance trade. With respect to the internal Hanseatic trade, this particularly appears to be a promising approach, although, given the aforementioned results concerning the institutional conditions necessary for establishing long-distance trade in general, it may initially be rather surprising that Hanseatic merchants ever traded with one another in the way described above, often without formal contracting.

Figure 2.5: One-shot Game of Reciprocal Trade

![One-shot Game of Reciprocal Trade](image)

One-shot one-sided sequential prisoners’ dilemma game to model Hanseatic reciprocal trade: $P =$ profits of sale; $C_A =$ costs of shipping goods to merchant $B$.

Source: Authors’ own drawing adopted from GREIF 2000, p. 255.

The one-sided one-shot sequential prisoners’ dilemma game discussed above, from which Avner GREIF derives the immense importance of fairness-enhancing institutions for medieval long-distance trade, can be easily adopted for the kind of reciprocal trade that was so typical for exchange among Hansards (see Figure 2.5). This adoption is a special case of GREIF’s game of exchange with a parameter value $\lambda = 1$. In fact, the reciprocal trade of two Hansards always encompassed two agency relationships in parallel, because in most cases each of the two merchants was principal as well as agent, but not necessarily at the same time. Without any loss of generality, for a further clarification of the incentive structure underlying the particular contractual scheme of reciprocal trade, it is sufficient to model only one part of this bilateral agency relationship. And even though Hansards commonly entered into reciprocal exchange without formal contracting, principal-agent-theory can also be applied to this kind of implicit and informal contracting.

The analysis of this simple model of reciprocal trade is straightforward, and the message derived from it seems to be more than clear: because profits of a sales operation were unevenly distributed between the principal and the agent – profits always remained with the principal –, and because the agent knew this up-front, the implicit contractual scheme of reciprocal trade at first glance seemingly did not produce any incentive for agents to act fairly,
which in theory should have made commercial exchange among Hansards very difficult, if not impossible.

However, the opposite was true. For their commercial exchange Hanseatic merchants predominantly employed reciprocal trade, they stuck with it for quite a long time, and cheating does not seem to have been a too common strategy among Hansards. In the end, Hanseatic reciprocal trade was a viable institution and this viability can be derived from the analysis of a reputation-based infinite game\(^\text{112}\), for which the structure of the two players’ decision-making is depicted in Figure 2.6.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure2_6.png}
\caption{Reputation-based Infinite Game of Reciprocal Trade}
\end{figure}

Repeated and reputation-based one-sided prisoners’ dilemma game to model Hanseatic reciprocal trade: \(P\) = profits of sale; \(C_A\) = costs of shipping goods to merchant \(B\); \(r_B\) = reputation value pertaining to \(B\)’s behaviour.

Source: Authors’ own drawing.

In this more realistic scenario, where trading activities can be repeated, some of the former assumptions are modified. First of all, a reputation value \(r_B > 0\) is introduced by which a fair behaviour of the agent (merchant \(B\)) is awarded, whereas an eventual defecting behaviour is penalised by \(r_B < 0\). Agents are now able to either gain or lose their reputation. However, reputation can only be effective as an incentive to fair play within an agency relationship if there is a past as well as a future. This is why it is so important to model commercial exchange not only as a repeated game, but also as an infinite game.

\(^{112}\) A rather similar infinite game is used, for instance, to analyse political conflict between social groups in late medieval towns or gift-exchange at late medieval courts (cf. Lehmann 2004 and Hirschbiegel / Ewert 2013).
one. Both principal and agent can only establish a good reputation as businessmen in the preceding rounds of the game. Likewise, a potential loss of reputation can only be a real threat to those defecting or cheating if there are future rounds of interaction. Secondly, assuming the infinity of repetitions is plausible insofar as in reality both partners did not know when exactly their exchange relationship would come to an end. In general, whether a game can be repeated infinitely or only for a fixed number of rounds makes a great difference to its outcome. It can be proved by backward induction, that in finite games rational players always choose a non-cooperative strategy in the last round of the game, because they know that the game will not be continued afterwards. Choosing a cooperative, but for the moment only suboptimal strategy, will by definition not pay off in the future.\(^1\)

In an infinite game, finding the players’ equilibrium strategies is straightforward, too, but derivation demands infinite number summation. For the agent (merchant \(B\)) betrayal of the principal (merchant \(A\)) will not pay off in the long run. Any sort of defection in the first round when being commissioned for a sales operation will result in merchant \(B\) no longer being considered as a trading partner in all subsequent rounds, even though this uncooperative strategy of the agent would earn him a higher level of utility in round one than would fair behaviour. Nevertheless, if a long-term rationale is assumed, and such an assumption seems to be plausible with regard to medieval merchants, the agent should act fairly. However, since this is a general rule only, there is enough room for eventual betrayal. The fact that in some historical cases defection or even betrayal of Hansards is observed does not generally contradict the rule of fairness and it does not automatically imply that this rule has to be rejected. It might be the case that some merchants underestimated the long-term consequences of defection, or they simply thought their own betrayal would not be discovered.

Given that under these circumstances a rational agent in general is supposed to always act fairly, the principal (merchant \(A\)) should employ merchant \(B\) as an agent. Up-front, however, the principal cannot be sure of both the ability and honesty of merchant \(B\). At this point of the game reputation comes into play. If merchant \(B\) is not a newcomer and thus already has

\(^{113}\) Cf. Holler / Illing 1996.
some sort of commercial reputation, this information will certainly facilitate merchant A’s decision-making. On the contrary, if there is no reputation available, a rational strategy choice of merchant A would be to commence a commissioned trade operation by only shipping a small volume of commodities at the beginning to test the ability as well as the honesty of merchant B. All in all, by extending the game of trade to an infinite number of rounds and by introducing a reputation value the incentive structure of the game is altered so that fair exchange in general becomes self-enforcing, which in turn is proof of the viability of Hanseatic reciprocal trade as a means of commercial exchange.

Non-hierarchical Means of Coordination

To coordinate commercial exchange between Hansards based on reciprocal trade non-hierarchical means were necessary. With reputation, trust and a common culture, mechanisms can be identified that helped to overcome existing disincentives. Through these non-hierarchical means of coordination it was possible for the Hansards to exchange their commodities within the Hanseatic network organisation of trade, and in most cases exchange was also handled in a fair manner.

First of all, the most effective means of coordination within the Hanseatic network organisation surely was the reputation mechanism.114 To have an excellent reputation, or at least to not lose this reputation, was important for medieval and early-modern merchants in general, not only for Hanseatic merchants. However, in the Hanseatic world, a commercial setting dominated by individual merchants and small-size firms, a setting with relatively small volumes of trade, little financial capital available and weak juridical institutions, reputation was obviously of outstanding importance to make fair commercial exchange possible. Hanseatic merchants made use of their reputation as businessmen as a kind of social capital, to use Pierre Bourdieu’s term. Since somebody who cheated not only had to fear the loss of a particular business contact, but of all his business contacts, this can be called a multilateral reputation mechanism, which is a well-established

---

114 See e.g. Staber 2000, pp. 69–71; MacLeod 2007.
fact in the economic research into medieval trade.\textsuperscript{115} Having a high reputation was therefore essential to all merchants participating in the Hanse’s commercial networks, and the desire to maintain it was a primary incentive to act fairly, because cheating not only damaged the relationship with the betrayed partner, it also resulted in a loss of access to the whole network, and thus undermined all possible partnerships for the future. Moreover, the loss of reputation of individual merchants was in fact made public in the Hanseatic world, so such a threat was very real. Hanseatic societies and other institutions that presented opportunities for Hansards to socialise such as the \textit{Zirkelgesellschaft} (‘society of the circle’)\textsuperscript{116} of Lübeck or the \textit{Artushöfe} (‘King Arthur courts’)\textsuperscript{117} in the Baltic area contributed greatly to the multilateral self-enforcement of fairness through reputation, because starting from there information on the reputation of other network members was distributed across the whole network. There is plenty of evidence, for example, that the names of those who were no longer allowed to share the Hanse’s privileges in Bruges were published in the \textit{Artushof} of Danzig / Gdańsk\textsuperscript{118}. In contrast to exchange-related information that would have to be transmitted quickly in order to monitor particular trade operations, any information regarding the merchants’ reputation only needed to be somehow announced to prevent fraud among merchants in the future. The various forms of Hanseatic conviviality should therefore not just be considered as a social phenomenon of the late Middle Ages from a cultural-historical point of view, because as information exchanges these institutions proved to be extremely instrumental in giving the Hanse’s network organisation of trade a strong cohesion.\textsuperscript{119} As a result, the multilateral reputation mechanism helped the Hansards to solve the problems of free-riding and controlling agents and it made reciprocal trade a viable and self-enforcing mode of commercial exchange inside the Hanse.

However, the multilateral reputation mechanism was not the sole non-hierarchical means that helped to coordinate commercial exchange within

\begin{flushleft}
\textsuperscript{116} Cf. Dünnebeil 1996.
\textsuperscript{117} Cf. Selzer 1996.
\textsuperscript{118} Cf. Selzer 1996, p. 105.
\textsuperscript{119} Cf. Selzer 2003b, pp. 84 and 96 f.
\end{flushleft}
the Hanse’s network organisation of trade. There is a long scholarly debate on alternatives to the classical coordination mechanisms such as the price on markets or the hierarchy within organisations, and one result of this debate is that under certain conditions trust can be regarded as an equally effective and efficient coordination instrument. In particular, trust is important for the coordination within a network organisation because trust can compensate for the lack of control by hierarchical means. This is why network organisations are often called ‘total trust’ organisations, as opposed to ‘zero trust’ hierarchical-bureaucratic organisations. In a network organisation all actors have to trust each other. This can be applied to the principle of Hanseatic reciprocal trade and the agency problem resulting from the implicit contractual scheme of this form of exchange. The principal has to trust in the honesty and the ability of the agent to carry out the commission in the principal’s interest. Likewise, the agent has to trust in the goodwill of the principal, and he has to trust that the principal will act in the same way when being an agent himself. In both cases, the reputation an actor gains can facilitate the earning of trust. Yet, a remnant of insecurity remains, the overcoming of which is considered as trust. Of course, it took time for trust between two merchants to develop, but once trust had been established, a reciprocal partnership was of great economic value for both sides. This also explains why some of the reciprocal partnerships between Hansards existed for such a long time. Following the reputation-based infinite game of reciprocal trade discussed above, a clever and utility-maximising strategy for both principal and agent within a partnership would be to mutually build up trust by only exchanging small volumes of commodities at the very beginning, and then to increase these volumes as long as each participant behaves fairly. This kind of step by step approach, which in game theory is called ‘Tit-for-Tat’, can be identified, for instance, in the growing volumes of transactions between Hildebrand Veckinchusen and Gerwin Maschede.

121 Cf. Reed 2001, p. 203. See also Figure 2.1 above.
This is an instructive example of how a bond of trust between Hanseatic merchants was formed over time.\textsuperscript{124} Very often, partners also tried to tighten such trade relationships by mutual gift-giving.\textsuperscript{125}

Finally, common culture and commonly shared values are discussed in the literature as effective mechanisms of coordination.\textsuperscript{126} The spread of common values across the Baltic and the creation of a Hanseatic cultural identity were more or less a by-product of migration. The common Lower German language fostered a tight bond between Hanseatic merchants.\textsuperscript{127} Common culture, commonly shared values and common standards were effective at several levels within the Hanseatic network organisation of trade. This becomes evident at the family level, in other words the area of the core trade relationships of Hanseatic merchants. Cheating or betraying a family member or a friend not only meant losing a particular mutual transaction relationship, it was also a likely reason to be excluded from the entire network. The impact of a common culture can also be identified in cases of contact with foreign merchants. It has been demonstrated more than once that cultural identity and economic interests within the Hanseatic network organisation of trade were so strongly interwoven that foreign merchants simply had no other choice than to adopt Hanseatic culture if they wanted to be integrated on a lasting basis into the more or less closed circle of Hansards.\textsuperscript{128} The common cultural orientation among Hansards was also reflected in legal customs. This in turn was extremely supportive of any trade on a reciprocal basis in that it demanded that both sides involved in a commercial transaction treated the partner’s goods with exactly the same care and attention that they would have exercised with regard to their own affairs. The formula \textit{to synem besten to verkopen} (“to sell something for his best interest”) can be found again and again in various sources.\textsuperscript{129} Whoever neglected to sell the goods and commodities with which he was

\begin{footnotes}
\begin{enumerate}
\item Cf. Stark 1985.
\item See for examples from Riga, Königsberg/Kaliningrad, Oslo and Rostock Stein 1898, pp. 89–91, Nr. 10, and pp. 93–97, Nr. 13, and p. 114, Nr. 21; Stark 1984, p. 141; Thierfelder 1958, p. 209.
\item Cf. de Boer / Gleba / Holbach (eds.) 2001.
\item Cf. Selzer / Ewert 2001, p. 156 f.
\item Cf. Ebel 1957, p. 84.
\end{enumerate}
\end{footnotes}
entrusted with the same amount of care as if they had been his own and, thus, to the best advantage of his partner, not only had to fear legal action, but also had to be aware of losing his reputation.

An Economic Assessment of the Hanse’s Network Organisation of Trade

Individual Economic Benefits

It was shown in the previously discussed game-theoretical analysis that reciprocal trade can in fact be considered as a viable commercial institution for the Hansards. Therefore, since the Hanse’s network organisation of trade was primarily built upon reciprocal trade, this institutional arrangement itself also proved to be viable, even more so because the Hansards were relying on non-hierarchical means such as reputation, trust and shared common values to coordinate individual commercial interests and to enforce fairness among them. Moreover, using these networks for commercial purposes was certainly beneficial for Hanseatic merchants, even though in the long run this institutional arrangement also had some ambiguous consequences for the competitiveness of the Hanse as a whole, a point that will be elaborated in more detail below in Chapter 6 of this book. At first, ‘networking’ naturally also produced many costs instead of reducing them. Since merchants were engaged in medium-term or even long-term partnerships, they had to account for the opportunity costs that were due to these individual commitments. Common costs could be produced because single members of a commercial network could attempt to take the network services for free and to externalise private costs to the network community. So, why did Hanseatic merchants nevertheless prefer this pattern of trade and vigorously stuck to it until way into the sixteenth century? Participation in a commercial network for each of them must have generated personal profits, at least in the long run, otherwise there would not have been any incentive for participation at all. Such personal benefits were gained because with the network organisation of trade costs related to transaction as well as organisation costs were saved and because contractual risks could be minimised.
Cost Savings

There are good theoretical reasons to believe that choosing a network structure for trade significantly reduced the costs of commercial exchange, and transaction costs considerations help to clarify where exactly costs could be saved or be even avoided. Individual level benefits of networking can be derived from the transaction costs approach, which was developed by Ronald H. Coase and Oliver E. Williamson.\textsuperscript{130} The role that particular institutions of trade played for the reduction of transaction costs, and thus the enhancement of trade and economic growth in medieval Europe, has been analysed in numerous studies, for example by Douglass C. North and Avner Greif.\textsuperscript{131} These savings can be split into reductions of transaction, information and organisation costs.

Probably the best-known benefit of a network structure is its ability to significantly decrease transaction costs. This cost reduction mainly stemmed from network members acting in accordance with the same set of norms, even more so because many of them were members of the same family or considered each other as friends. Mutual commercial transactions were facilitated within such a setting being based on kinship and friendship. Stable sets of partnerships also reduced transaction costs because merchants already knew what could be expected from a particular trading partner. Due to the commercial networks’ core principle of construction, legally independent merchants had to cooperate voluntarily. In general, each partner had the same interests and because of this congruence they could trust each other’s determination to keep to the partnership.

A second block of costs to be considered contains all costs arising from collecting and processing information. Being a member of a network helped Hanseatic merchants to find partners in whom they could trust. The network provided them with all the necessary information on the reputation of a potential trading partner, either by its kinship character or its social institutions. Not only the risk of ‘adverse selection’, that is, choosing the wrong trading partner, was minimised. With networks based on reciprocal

\textsuperscript{130} Cf. Coase 1937; 1984; Williamson 1979.
trade, the costs of market information could also be reduced. In long-term partnerships, the information about market conditions in distant places where a partner sold a trader’s goods did not necessarily have to be gathered by the sending merchant himself. As shown above, because of the multilateral reputation mechanism, the partner who handled the sale had strong incentives to do so in the best interest of the sender. Therefore, it was sufficient if only the seller had the relevant information at his disposal.

A decrease in the costs of organisation was probably the biggest profit that could be made from operating in commercial networks. The networks’ structural element of employing each other mutually as commercial agents implied that many of the core functions of trade systems could simply be delegated to a trading partner. As a consequence, Hanseatic businesses remained relatively small and simply organised. This enabled merchants to save most of the costs which otherwise would have been spent on hierarchical and extensive control of commercial transactions. Moreover, since the transmission of information was slow due to the immense geographical extent that had to be bridged by trade in the Baltic and the North Sea, instructing and controlling employed commercial agents in distant market places on a regular basis was almost impossible. By deploying trading partners as agents instead, transactions could be handled much more easily and much more safely. Due to a potential threat to their reputation if they acted otherwise, both partners acted primarily in the other partner’s interest. Such a desirable, fairly responsible conduct of merchants was also enforced by the common judicial practice within the Hanse. In lawsuits concerning trading activities, arbitration usually pointed to the principle that each party had to act in such a manner that also its own interest would have been guaranteed. Therefore, a backup of commercial transactions by written contracts was unnecessary in most cases.

The Minimisation of Contractual Risks

Efficient coordination and cooperation within the (in principle) loose and very flexible structure of the Hanse’s network organisation of trade could be guaranteed by a multilateral reputation mechanism, by mutual trust and a common cultural orientation. With reciprocal trade embedded in their network trade structure, the Hanseatic merchants were even able to mini-
mise any existing contractual risks.\textsuperscript{132} Since the agent was always allowed to subtract all the expenses he made in the operation of a sale, reciprocal trade has to be considered as a specific form of an implicit cost-plus-contract. It can be shown that for the Hanseatic merchants who committed to such an implicit and informal contractual scheme, networking was an efficient solution to cope successfully with the contractual risks known as ‘moral hazard’, ‘adverse selection’ and ‘hold-up’.\textsuperscript{133}

The main feature commonly attributed to a cost-plus-contract is moral hazard. It was possible to minimise this contractual risk with the help of the multilateral reputation mechanism and a general policy of personal responsibility. Irresponsible action or cheating by the agent would then cause him to lose his reputation. However, because it was clear from the outset that only the principal benefited from the sales profit of a specific commercial transaction, and that the distribution of profits between principal and agent was effectively decided prior to awarding the commission, reciprocal trade also incorporated elements of a fixed-price-contract to a certain extent. This is why it was also necessary to keep the risk of adverse selection as small as possible. As the reputation and trustworthiness of individual Hanseatic merchants was commonly made public across the trade network, selecting a ‘wrong’ agent was very unlikely, at least in the long term. Signalling played also an important role. This is very well documented in surviving letters of Hanseatic merchants encompassing lists of prices by which a trading partner attempted to prove his commercial skills to the principal along with his profound knowledge about what was going on in his home market.\textsuperscript{134}

Finally, by shipping his own goods to the trading partner a merchant always made a so-called specific investment. He bound himself, at least for this one commercial transaction, to the recipient of the goods, who was, as a matter of fact, then in a hold-up position.\textsuperscript{135} To a great extent, the multilateral reputation mechanism within the Hanse’s network organisation.

\textsuperscript{135} Cf. Selzer / Ewert 2005, p. 28.
of trade prevented this position from being exploited by the agent to the disadvantage of the principal, so that it rarely resulted in an actual hold-up. A merchant who attempted to cheat his trading partner not only had to fear being permanently excluded from the trade network; by cheating he first and foremost risked losing his own goods which were, following the principle of reciprocal exchange, in the hands of his trading partner and thus provided this trading partner with a form of security. An example of such an hold-up is the behaviour of Hildebrand Veckinchusen, who demanded a monetary compensation from Engelbrecht Witte for the agent services he had provided to his father-in-law for so many years at the Bruges market, after he had found out that he was not remembered in Engelbrecht Witte’s will.\textsuperscript{136}

**Concluding Remarks**

It would therefore be utterly misleading to conclude that the merchants of the Hanse operated in a very modern style simply because the principle of network organisation in organisation science literature is often assumed to be the most progressive organisational mode to date. It nevertheless should have become obvious due to this analysis that categories such as ‘modern’ or ‘backward’ in general fail to capture the relevant characteristics of historical institutional arrangements. The business practice of the late medieval Hanseatic merchants was neither ‘backward’ nor was it already ‘modern’. It was simply an effective as well as an efficient and therefore viable institutional arrangement for long-distance trade that on top of all that enabled all merchants to make individual profits, because with it transaction and organisation costs could be kept at a low level and contractual risk could be effectively minimised.
