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PRIVATE RULES IN GLOBAL NETWORKS: HEDGING AGAINST RISKS

Jekaterina Rindt, Lancaster University, UK, j.rindt@lancaster.ac.uk
Stefanos Mouzas, Lancaster University, UK, s.mouzas@lancaster.ac.uk

ABSTRACT

The objective of this paper is to examine how companies hedge against risk in global business networks. Risk is defined as the probability of an event occurring multiplied by its business impact. Recent events, such as the horse meat scandal have propelled network risks to the top of the business agenda. Companies operating in highly-competitive environments, such as in the grocery retail business, are finally held accountable for most disruptions that happen anywhere in the network, and hence companies need to interact not only with their direct business partners, but also with companies that operate at the other 'end' of a network or operate in even more remote business networks.

Drawing on an empirical investigation of how German companies operating in food retail use 'private rules' to hedge against risks, we identify a pattern of practices that aim at minimizing risks inherent in business networks. The paper proposes a process-model of risk hedging practices in global networks that improves our understanding of how companies hedge against risks.

Keywords: Risk, Business Networks, Quasi-integration, Private Rules

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Stakeholders seem to understand the meaning of private rules better than legislation.
(adapted from Van der Meulen, 2011, p.90)

INTRODUCTION

The objective of this paper is to investigate how companies hedge against risks in global networks. Risks can be expressed as the "Probability (of events) × Business Impact (or severity)" (Brindley, 2004, p.18) or, in other words, as the "chance, in qualitative terms, of a defined hazard occurring. Thus, risks combine a probabilistic measure of the occurrence of the primary event(s) with a measure of the consequences of that/those event(s)" (Royal Society, 1992, p.4).

Recent events, such as the horse-meat scandal, the EHEC-outbreak or Japanese earthquake have propelled network risks to the top of many companies' agendas (Stulz, 2009; Solman, 2012). Apart from losses originating from natural disasters, companies operating in highly-competitive markets are held finally accountable for most disruptions happening anywhere in the network, even in cases where the company does not directly contract to the company in question.

Hence, there is increasing pressure upon companies to engage in complex, often global networks to deliver superior value at competitive prices; to meet shareholders' requests for steady profit growth and the consumers' and regulators' demand for high and transparent social and environmental standards – whatever the number and origin of business partners or local business customs. Balancing between "lowest cost at any risk" and "no risk at any price" (Glendon, 2012, in Newing, 2012) becomes key to surviving in global networks, where even incremental cost savings are decisive. Particularly well-known brand manufacturers and retailers have to cope with huge financial and reputational losses arising from potential network risks (Murray, 2007). This is due to the fact that most consumers might not understand network complexities and only associate the brand with unethical practices. In a similar vein, public interest groups, such as 'food-watch' target specifically well-known brand owners to raise public attention to issues occurring anywhere in the business network.

Operating in such a business environment urges better understanding of how companies can hedge against inherent risks. Managing network risks has been typically approached by operations research (Chopra & Sodhi, 2004; Kleindorfer & Saad, 2005;Narasimhan & Talluri, 2009; Knemeyer, Zinn & Eroglu, 2009; Maruchek, Greis, Mena & Cai, 2011a,b) and more recently by specialized research in supply chain management (Harland, Brenchley & Walker, 2003;Oke & Gopalakrishnan, 2009) and logistics (Khan & Burnes, 2007; Manuj & Mentzer, 2008). However, operations and supply chain research tend to take the single company as the unit of analysis and correspondingly provide a portfolio-like classification of risks to be managed. Many of these studies neglect the real-life situation that almost "no business is an island" (Hakansson & Snehota, 2006) and that risk management is rarely resolved by a single company unilaterally. Despite the obvious benefits from examining risks through the lens of business networks, it is, indeed, surprising that dealing with risks in business networks is also rarely investigated by IMP related research (Harland, Brenchley & Walker, 2003; Hallikas, Karvonen, Pulkkinen, Virolainen & Touminen, 2004). Taking a network approach resembles more closely real-life complexities of risk hedging practices and takes research on risk management beyond the focal company perspective. For this reason, the present study is motivated to examine how companies hedge against risks by

investigating the orchestration of private rules that govern *whole networks of business relationships.*

'Private rules' refer to sets of business standards that are developed, enforced, sanctioned and adapted by individual or multiple companies by means of business codifications and third party audits. Private rules are communicated and enforced typically in the General Terms and Conditions of Trade (GTCT) of the more powerful actor in the business network and continuously adapted to changing business and market requirements. Given the increasingly global nature of businesses, 'private rules' govern whole supply networks *across* national boundaries; hence contrasting with typically geographically bound governmental standards.

These observations lead us to ask the following research questions: *How do companies hedge against inevitable risks arising from operating in global networks? And what processes are accountable for the identified risk hedging practices?*

To answer these questions, this paper begins with a brief overview of how risk management is addressed in the supply chain and operations management literature and how our current understanding of risk hedging practices and research can be enhanced by taking a business network perspective. Thereafter, we briefly outline the business practices developed for dealing with risks, building in particular on research on different forms of supply network configurations and contractual agreements. We then extend the current understanding of risk hedging practices by introducing the phenomenon of 'private rules'.

Next, drawing on multiple embedded case study research (Dubois & Araujo, 2007) of how globally operating German retailers deal with risks, we identify a pattern of risk hedging practices that center around the development of private rules. To understand the dynamics involved, we propose a process model that explains how companies actively try to address risk *probability* and *impact* by engaging in the creation of 'quasi-states' (Busch, 2011). The paper concludes with a discussion of theoretical and managerial implications as well as suggestions for further research.

CONFRONTING RISKS IN GLOBAL NETWORKS

Increasing globalization of markets, reliance on outsourcing for gaining competitive advantage, and the use of new information technologies that enable the functioning of global networks make companies inevitably more vulnerable to previously unknown risks, higher risk probabilities and impact (Narasimhan & Talluri, 2009; Jung, Lim & Oh, 2011). Longer supply chains result in increased numbers of product touch-points in diverse geographical areas (Marucheck, Greis, Mena & Cai, 2011a) and businesses face "subcontracting and subcontracting, until the company at the top of the chain might not be certain where it ends" (Noble, Chief Executive of the Chartered Institute of Purchasing & Supply, 2012). Disruptions in any part of the business network may result in a fall in market shares, decline in stock prices and operating performance, impede other network relationships with customers and suppliers or even cause a company to go out of business (Khan& Burnes, 2007).

Academic interest in understanding risk management in global markets has typically originated in the areas of finance research (Foot, Scharfstein & Stein, 2012; Bacchetta & Wincoop, 2013), supply chain research (Chopra & Sodhi, 2004; Jung, Lim & Oh, 2011), logistics research (Manuj & Mentzer, 2008; Khan & Burnes, 2007) and operations research (Kleindorfer & Saad, 2005; Knemeyer, Zinn & Eroglu, 2009; Narasimhan & Talluri, 2009; Marucheck, et al, 2011a, b) recently culminating in two special issues in the Journal of Operations Management (2009, 2011). Research from these fields has elevated attention to risk in global networks and contributed to risk research and management primarily by (1) outlining risk categories and (2) prescribing steps for reducing risk in terms of supply chain

disruptions. Categorizing risks is closely related to prescribing steps for risk mitigation, typically involving risk identification, estimation and evaluation (Harland, Brenchley & Walker, 2003; Khan & Burnes, 2007; Knemeyer, Zinn & Eroglu 2009).Identifying relevant risk categories is important in light of the fact that "supply chain management is a game played to new rules. Complex, global supply chains have become the norm, involving suppliers across the world, contract manufacturers and company-owned plants, third-party logistics and transportation providers" (Baxter, 2007).

Despite the recognition of high numbers of directly and indirectly interconnected actors, and the fact that most types of risks cannot be addressed by a single company unilaterally, research on risk management has focused on the *single company* as the unit of analysis and contains risk analyses to the supply *chain*, rather than taking a more holistic view of business networks (Johnsen, Wynstra, Zheng, Harland & Lamming, 2000; Harland, Brenchley & Walker, 2003; Johnsen, Lamming & Harland, 2008).

A business network in the context of the food sector can be described as a "set of supply chains involved in the production and supply of a particular product or product family [… which can also] incorporate links between, or across, individual supply chains" (Johnsen, Lamming & Harland, 2008, p.79). In contrast to the supply *chain view*, business networks provide a more complete picture of directly and indirectly connected actors involved in the supply of products or services. The business network view is even more relevant considering the recent proliferation of the companies involved in the food industry, such as specialized transport and logistics service providers, certification businesses, insurance companies and laboratories. Hence, a business network view will enhance the companies' ability to identify "dynamics that have their origin 'over-the-horizon' from its normal operations" (Ford, Gadde, Hakansson & Snehota, 2002, p.20).

Considering the benefits to be gained from examining risks through the lens of business networks for research and practice, and the relative deficit of IMP research dealing with the issue (Harland, Brenchley & Walker, 2003; Hallikas, Karvonen, Pulkkinen, Virolainen & Touminen, 2004; Johnsen, Lamming & Harland, 2008) this study ventures (1) to illustrate the relevance of the business network perspective to understanding risk hedging in *global* business networks, and (2) to depict the development of business practices developed by companies to reduce network risks not only in their direct inter-organizational relationships, but also in-direct relationships.

The business network perspective developed within IMP research is useful to improve our understanding of risk hedging practices in several ways: Taking a network perspective resembles more closely real-life complexities (Tikkanen, 1998) of risk hedging practices and allows moving our focus beyond the focal company perspective. In this way, the simplified view of companies *acting independently upon* their environment to mitigate risks is replaced with a more realistic and fine-tuned picture of how companies maneuver around risks in global networks by taking into account their embeddedness and interdependency with other actors (Ritter, Wilkinson & Johnston, 2004) and hence the company's limited ability to 'manage away' risks alone. In particular, we suggest that the business network perspective (Ford, Gadde, Hakansson & Snehota, 2002) provides a useful tool for examining risk hedging practices in real-life contexts, because it takes into account that risk hedging involves "action, reaction and re-reaction, based on a company's network pictures, its own and other's networking and the outcomes of this" (Ford et al, 2002, p.21).

In the next step, we provide a brief review of risk hedging practices identified in previous research and introduce the concept of 'private rules' that emerged in response to the complex and risk-laden business reality of global networks.

PRIVATE RULES FOR RISK HEDGING IN GLOBAL NETWORKS

IMP related research on risk hedging practices has been less concerned with categorizing risk, and rather explored business practices companies employ in order to deal with risks in business networks. These risk hedging practices can be divided into two broad groups based on the chosen network level of analysis: At the business network level, risks can be addressed by different supply network configurations (Blois, 1972; 2006; Mason, Doyle & Wong, 2006). At the dyadic, inter-organizational level, risks can be addressed through contractual means (Mouzas, 2006; Mouzas & Ford, 2006; Mouzas & Furmston, 2008; Mouzas & Ford, 2012).

To make sense of how companies deal with risks at both dyadic and network level, we can use the concept of 'private rules that allows hedging against risks addressing whole supply networks, yet relies primarily on dyadic relationships to enable the implementation of 'private rules'. The term 'private' defines sets of business standards that are enforced, sanctioned and revised by means of business codifications and third party audits and certifications. Typically, private rules are recorded in the General Terms and Conditions of Trade (GTCT) of the more powerful actor in the business network and continuously revised to adapt to changing business and market requirements. At a time when "the authority of national governments largely ends at their borders" (van der Meulen, 2011, p.49) private rules span national boundaries, as the only "set of rules that [companies] at opposite sides of the world have in common, are the rules they created for themselves by contract including the private systems they include in their relation" (ibid). Even global organizations, such as the World Trade Organizaion (WTO) set regulations only for national governments, not trading businesses (van der Meulen, 2011). Hence, we suggest that the current practices for risk hedging in global business networks in the food industry have risen over the last 40 years from quasi-integrating direct business partners (Blois, 1972) by contractual means to that of quasi-integrating whole supply networks, including direct and very distant, indirect business relationships by private rules. The business network configuration resulting from the *de facto mandatory* implementation of private rules resembles that of 'quasi-states' (Busch, 2011).To better understand the role of private rules in the context of other, known risk hedging practices, we briefly introduce the concepts of quasi-integration and business contracts that our current research builds on.

Recent studies on supply chain configurations suggests that most supply chains are not simply linear assemblies of actors, but rather form "web-like structures of interdependent firms …[where] integration is being achieved through the development and management of inter-firm relationships instead of through total ownership […also known as full vertical integration]" (Mason et al 2006, p.142). In between the extremes of purely transactional relationships and full vertical integration reside the 'quasi-integrated' (QI) structures, which include long-term relationships, buyer-supplier partnerships, strategic alliances and network organizations (Webster, 1992). Vertical QI describes "a type of vertical integration without legal form" (Blois, 1972, p.268). Companies choosing the quasi-integrated structures aim to "build *supply chain influence* in order to integrate the various supply chain stages without the financial commitment of ownership" (Mason et al, 2006, p.143, emphasis original). Supply chain influence results from an actor's power at one stage of the supply network to have an effect on decision variables of another actor in the supply network. Supply chain influence manifests typically by way of the more powerful actor *intervening* into the business of his counterpart by for instance (1) acquiring access to his plant and records to take quality checks or examine the cost breakdown; or (2) by dictating 'recommended' sub-contractors for raw material acquisition (Blois, 1972). Intervention allows the more powerful company to gain greater control over a supplier's business and reduce the *probability* of risks resulting from

sub-contracting. However, intervention alone cannot nullify all risks and certainly cannot mitigate the *impact* risks have if they do occur.
Yet, quasi-integrated structures allow companies to maneuver around risks associated with "rigidity of ownership" (Blois, 1972, p.253) *and* risks associated with arms' length relationships akin to purely transactional forms of interaction. Quasi-integrated structures allow companies combining the advantages of vertical integration, such as the "certainty of supplies of materials and services, better control over product [sourcing and] distribution, tighter quality control, prompt revision of production and distribution policies and better inventory control" (Blois, 1972, p.254) and transactional relationships, such as enhanced choice of business partners, low switching costs, no costs of ownership and hence greater flexibility in configuring a supply network that has the flexibility to adapt quickly to changing consumer preferences, regulatory conditions or economic pressures. These advantages hold true as long as the business partners understand to use contractual agreements as to reap the benefits of quasi-integrated structures.

Taking a closer look at quasi-integrated structures reveals that the areas benefitting from quasi-integrated arrangements are also high on companies' risk agendas, including risks related to the output such as product quality, safety and quantity; and risks related to processing products, such as production and distribution policies, just-in-time delivery and flexible changes in both, products and processes (Nestle Investor Seminar, 2011; Unilever Annual Report and Accounts, 2010; PepsiCo Annual Report, 2007).
In quasi-integrated structures, the scope of management control does no longer end with the legal boundaries of the company (Blois, 2006) and requires contractual relationships to coordinate, plan and safeguard value-creation activities between network actors (Bazerman & Gillespie,1999; Dekker, 2004).Hence, *capitalizing on quasi-integrated structures requires securing the benefits of this configuration and hedging against risks inherent to quasi-integration by wisely employing business contracts* (Ring & Van den Ven, 1992; Lusch & Brown, 1996; Ring, 2008). Research on the role of business contracts in continuing, long-term inter-organizational relationships, and in particular on umbrella agreements (framework contracts) in the context of the FMCG industry has been constantly advanced in the IMP group (Mouzas, 2006; Mouzas & Ford, 2006; Mouzas & Blois, 2008; Mouzas & Furmston, 2008). Umbrella agreements provide a 'frame' for future transactions and facilitate re-negotiation in "regular, stable and established business relationships" (Mouzas, 2008, p.40). Hence, umbrella agreements do not address specific transactions, such as volume, delivery time and payments due, but rather provide a 'constitution like' set of explicitly stated norms and principles within which future exchanges are concluded (Mouzas, 2006). Apart from framing implicit principles of business interaction, umbrella clauses deal with issues, such as exclusivity, confidentiality, property rights, force majeure, termination conditions and renegotiation (Mouzas, 2008). Recording these conditions provides a frame for *how* future deals will be carried out. Benefits of drafting umbrella agreements include the reduction of costs in "terms of time and efforts to select, manage and oversee single transactions […] and provide certainty regarding the conditions under which exchanges may take place […as well as] provide a platform for an on-ongoing negotiation" (Mouzas & Furmston, 2008, p.38).
As a result, umbrella agreements provide companies with the necessary arrangements as a means to hedge against risks *in dyads* by consenting to principles of future transactions. Therefore, umbrella agreements facilitate quasi-integrated supply network configurations, by addressing risks in *direct* business relationships.

However, the question pertains, how companies can hedge against risks that do not emerge from their direct business partners, but in some distant part of the business network?

The challenges emerging from this situation are that (1) the companies elsewhere in the business network may operate in a totally different business environment, where the legal, social and environmental requirements are not matching Western standards; (2) the distant business partners must not be accountable for their conduct to another company at the other end of the business network, and there is no legal safeguard that provides for damages in case one party suffers losses from the actions of a company at a distant part of the network. Nevertheless, not hedging against risks from distant parts of the supply network, or even not knowing of these risks is no option, as ignorance can become very expensive and result in unfavorable business insurance terms, reputational and brand damage (Felsted, 2012; Lutz, 2013).

It is this problem of global business networks that private rules address: Hedging against risks emerging in any parts of the global network. It would be prohibitive in terms of cost, time and monitoring for a company to make umbrella agreements with every indirect actor in the business network. Additionally, as companies may operate in distant markets under different business conditions and jurisdictions may not feel obliged to adhere to the stated terms. Companies urged to embrace operations in global networks, yet unable to deal with "hundreds of [actors], who could offer goods at lower prices […] but all of whom were located in their nations, had considerably different expectations as to quality than the buyer, and were- for reasons of cost, time, and/or inadequate means for legal redress in that jurisdiction – impossible to bring to court in cases of non-compliance with the terms of contract" (Busch, 2011, p.60) developed various forms of private rules, often filling gaps in current legislations and exceeding requirements posed by current European food law.

Pushed by recent scandals over food safety, private rules, also referred to as 'voluntary' or 'secondary' standards (EU Commission, 2010) or as the 'private food law' (van der Meulen, 2011) or 'private schemes' (EU Commission, 2009) in the case of the food industry, became a new concept that rapidly developed over the past seven years and gained incredible dedication from business, making an inventory of these private rules even solely in the food sector impossible (Kroger, 2012). Hence, this paper aims to provide a systematic analysis of private rules *as risk hedging practices* by focusing on the German food sector.

RESEARCH DESIGN AND METHODOLOGY

Underpinned by a realist epistemology (Sayer, 1992, Easton 2000; 2009; Reed, 2005; Morais, 2008; Archer, 2010; Tsoukas & Chia, 2011) this study employs multiple embedded case study research (Ragin & Becker, 1992; Easton, 2000; Dubois & Gadde, 2002; Yin, 2003; Halinen & Törnroos, 2005; Dubois & Araujo, 2007; Dubois & Gibbert, 2010; Ryan, Täthinen, Vanharanta & Mainela, 2012) to examine how companies operating in global networks hedge against risks. In this way, the study aims to identify the causal mechanisms that are accountable for the risk hedging practices.

Exploiting the possibilities of embedded case study research has been crucial to provide an in-depth, structured analysis of a complex and context-contingent, yet under-researched phenomenon of private rules. Researching global networks demands grasping the "complexity of the links within and between actors [which in turn] requires a methodology [that] can handle rich sources of data, […] multiple forms of data collection" (Easton, 2000, p.385) and flexible tracking of changes over time. Above all, case study research provides a fruitful approach to analyzing small numbers of "entities or situations about which data are collected… [yet does not compromise on] developing a holistic description through an iterative research process" (Easton, 2010, p.119). Considering that little research has been conducted on risk hedging in global networks and on the analysis of GTCT, it was of critical to this study to not just "investigate a phenomenon in its real life context" (Piekkari et al, 2010, p.112) but to establish understanding what the empirical phenomenon is a case of in

theoretical terms (Ragin & Becker, 1992). In order to establish the critical link between empirical data and theoretical concepts, we adopted the logic of "systematic combining" in our case research design, which allows for the simultaneous evolution of the "theoretical framework, empirical fieldwork and case analysis" (Dubois & Gadde, 2002, p.554).

The four selected cases were subject to theoretical and purposeful sampling (Dubois & Gadde, 2002; Dey, 2004; Gobo, 2004; Dubois & Araujo, 2007) to illustrate the function of private rules as risk hedging practices. The sampling decisions and data collection developed as the research progressed, informed by ongoing data analysis (Dubois & Gadde, 2002). Given the increasing consolidation of German food retail, leaving effectively six retail chains, we chose four cases for this paper that illustrate risk hedging practices of so called 'hard discounters' and regular supermarket chains. The comparability of the cases was established by using common research questions, theoretical bases across the cases and analyzing data from similar case networks, the same industry and country (Halinen & Törnroos, 2005).

In 'systematic combining', the goal of "matching theory and reality" (Dubois & Gadde, 2002, p.556) is significantly enhanced by drawing on multiple sources of evidence. Data triangulation "contribute[d] to revealing aspects unknown to the researcher" (ibid) and enhances[d] the accuracy of the findings (Yin, 2003). Therefore, the following table summarizes the multiple data sources underlying this study:

Table 1. Data Triangulation

Type of Data	
Primary data:	▪ **20 in-depth interviews** with multiple actors involved in the food chain, including manufacturers and processors, advisory lawyers, strategic risk consultants, certification and audit experts, business association representatives and leading NGO activists. ▪ **6 recent and confidential 'sets of contracts'**, including framework contracts, specifications and ordering agreements, including letters on alterations of contract terms for the periods 2009-2013, and insurance policy agreements ▪ **1 recent 'request for information'**, which is an extensive supplier screening document, 2011 ▪ **11 recent and confidential General Terms and Conditions of Trade** (GTCTs) for the period 2008-2013
Secondary data:	▪ **6 Audit documents** for private industry standards, including IFS, HACCP, BRC, SQF, QS, BSCI and other GFSI recognized standards ▪ **Food safety and quality standard specifications** adopted by the European and German governments, including Global GAP, Good Practice Models, ISO 9000, ISO 14000; ISO 22000, Codex Alimentarius ▪ **Analysis of proprietary standards** of 4 major German retail chains ▪ **Governmental reports issued by the European and German authorities**, such as the "Commission Communication- EU best practice guidelines for voluntary certification schemes for agricultural products and foodstuffs' or "Communication from the Commission to the Council, the European Parliament and the European Economic and Social Committee,: Contributing to sustainable development: The role of fair trade and nongovernmental trade-related sustainability assurance schemes' ▪ **84 media and industry reports** on current developments in addressing risk management in the food industry, including reports from the Harvard Business Manager, The Economist (Intelligence Unit), Lebensmittelzeitung, Financial Times Reports, Euler Hermes Report etc. covering the period from June 2010 to March 2013.

Indeed, triangulation of multiple data sources helped us gaining insight on new dimensions of the research problem, by understanding the central role of GTCT for companies when hedging against risks in global networks. Consequently, data analysis focused significantly on the anatomy of GTCT, comprising the examination and categorization of GTCT clauses across the major German retail chains.

Since the validity of and credibility of case study research derives less from the "representativeness of its samples but from the thoroughness of its analysis" (Silverman, 1993, p.169) we briefly outline the implementation of our abductive approach to data analysis.

The abductive approach to data analysis allows us to play a range of theories "against systematically gathered data, in conjunction with theories emerging from analysis of these data" (Strauss & Corbin, 1998, p.167). In this process, content analysis posits a "diagnostic tool" (Mostyon, 1987, p.117) to make sense of the verbatim transcribed and translated interviews and GTCT and framework contract clauses. The coding helped us to link data fragments to first, and later second and third order concepts that in turn have "set the stage for interpreting and drawing tentative conclusions" (Coffey & Atkinson, 1996, p.28). The chosen concepts were the result of iterative cycles of moving between the empirical evidence, the identified theoretical lenses and research questions. In the following figures 2, 3 and 4, we depict the abductive analysis of empirical data, where the developed concepts became progressively "analytic […] conceptualizations of key aspects of data" (Dey, 2004, p.83). During this process, the theoretical framework has helped us to "delineate important variables, suggest relationships among them and [direct our] interpretation of findings" (Dubois & Gadde, 2002, p.559).

The outcome of this case study research is a process model of hedging against risks in global networks that is underpinned by the operation of a causal mechanism that we term 'risk mitigation'. This process model adds to the rigor of the case study, as it is the identification of the "operation of some identified theoretical principle that distinguishes case study research from an account of a series of events" (Dubois & Araujo, 2004, p.210). Seeking a 'causal explanation' underlying the identified risk hedging practices, the study further capitalizes on the fruitful combination of a realist philosophy and the case study research method (Easton, 2000, 2002, 2010; Järvensivu & Törnroos, 2010; Ryan, Täthinen, Vanharanta, Mainela 2012). Indeed, the second question draws on the fundamental explanatory aim of a realist epistemology.(Easton, 2010). In realist epistemology, causality does not refer to a "relationship between discrete events ('cause and effect'), but the '*causal powers'* or '*liabilities*' of objects or relations, or more generally their ways of acting or 'mechanisms'" (Sayer, 1992, p.104, emphasis original). The focus on *inter-organizational* relationships is important, since the "causal powers inhere not simply in single objects or individuals, but the social relations and structures which they form" (ibid). Equally, the case context is fundamental for understanding actions in social systems, as these "cannot be understood independently of the contexts which are constitutive of their meaning: They rarely retain their identity as the context is changed" (ibid, p.235). Building on the context rich case analysis, we "moved backwards from the phenomena under investigation and kept asking 'what, if it existed, would account for this phenomenon?'" (Reed, 2005, p.1631), or "what 'produces', 'generates', 'creates' […] or, more weakly, what 'enables' or 'leads to'" this phenomenon (Sayer, 1992, p.104).

EMPIRICAL FINDINGS: BACKGROUND INFORMATION ON INDUSTRY CONTEXT

The German food retail sector faces high demands from consumers, governments, NGOs and competitors to offer safe food at lowest possible prices. The mixture of complex, long and highly interconnected food supply and distribution networks and the hazardous impact of food safety problems on consumers, the retail business and strictness of looming governmental regulations drive retailers to engage in sophisticated, yet highly efficient risk hedging practices. At the center of risk hedging practices is the retailers' introduction of globally present certification schemes, operated by independently accredited certification bodies and the codification of these certificates and retailer requirements in the GTCT valid for the whole of supply networks. To understand the driving forces behind this system, it is vital to know the industry context German food retailers operate in.

Germany offers a unique food retail sector, shaped by a tightly regulated industry, price and quality conscious consumers, strong consumer groups, but also an elaborate hierarchy of

industry associations. In order to survive in a fiercely competitive industry, retailers and manufacturers are forced to increase efficiency, effectiveness and productivity through joint projects driven to meet increasing demands for cheap and safe products (Wilson, March 2012). Nongovernmental organizations (NGOs) such as 'Foodwatch' or the state sponsored 'Stiftung Warentest' strongly influence consumer behavior via own and public media campaigns, often promoting enhanced consumer scrutiny. Moreover, consumer groups closely monitor the food market and often influence governmental regulations passed in response to market developments, such as rising awareness of unsustainable sourcing or product labeling issues.

The two distinctive features of German food retail are deeply rooted in (1) consumers' high price sensitivity, which triggers intense price competition and the proliferation of retail brands and growth of 'hard discounter chains'; and (2) the noticeable absence of foreign retail chains (Stiegert & Kim, 2009) due to high entry barriers and the frequent failure of foreign companies (i.e. Wal-Mart, Inter-Marche) to respond to these consumer needs.

As can be observed in other European countries, the major trend in this industry is the increasing consolidation of retailers who aim at developing "exclusive relationships with fewer, favored, single source or dedicated partnerships" (Hingley, 2005, p.852). This trend results in high 'power asymmetry' and is nourished by the consumers' preference for retail brands, which boosts the retailers' power to exert supply chain influence via intervention strategies and settling the terms of contracting (Blois, 2003; 2006). Retail label manufacturers are increasingly prone to substitution by competitors who agree to 'better' conditions for the retail chain, thus requiring the manufacturers in the first place to consent to most of the retail chain's demands, such as higher margins, product recipe and label rights and the rights to terminate the contract at any time.

Hence, on the one hand, increasing consolidation raises the power of retail chains; yet on the other hand consolidation enhances competition among the chains drastically. In order to survive in this highly competitive environment, retail chains turn to global sourcing, sophisticated food quality requirements and the unfailing hunt for even incremental cost savings. To increase efficiency, retail chains operate globally: sourcing from all over the world and selling in multiple countries, thus operating in and through multiple jurisdictions, spanning national borders. Companies who supply these global chains are less concerned with fulfilling the requirements for accessing national markets and protecting their presence in certain countries, but are rather interested in fulfilling the requirements set by a global retail chain that will open doors to multiple markets. In competing for the position of supplying a retail chain, companies typically perceive the relationship to bear little mutuality. Rather, due to the imbalance of power, suppliers perceive most of the "risk as being unfairly born by them […] the risk present in vertical supply chains [is] asymmetric, that is, the width and depth of a retailer's business facilitate its survival if a supplier is lost; whereas the consequences for a supplier losing a retailer account can be much more serious" (Collins & Burt, 1999, in Hingley, 2005, p. 852).

Having outlined the specifics of the empirical context, we now turn to untangle the complex system of risk hedging practices in light of the business network perspective. Therefore, we structure the case analysis according to our research questions. We conclude our analysis by proposing a model of risk hedging in business networks, which suggests that private rules codify (1) the intervention into suppliers' businesses to minimize risk probability, (2) the transfer of risk liability to minimize risk impact upon the retailer; and (3) the protection of (uninsurable) assets such as business reputation and brand value through a combination of private rules and contract law. The GTCT serve as a platform for retailers to efficiently ensure the compliance with this 'intervention- transfer-protection' system across the business network, reaching even indirect business actors operating in any part of the world. How this

risk hedging system works in detail shall be outlined next by presenting the findings from an in-depth analysis of the GTCT of four major German retail chains involved in global networks.

Case Evidence: How do companies hedge against risks in global networks?

Alpha, Beta, Gamma and Delta[1] constitute the top four retailers in Germany, ranked by business volume and market share. The retail chains operate globally in sourcing and retailing, as is evident from the distribution of store outlets the retailers operate:

Table 2: Performance Data of Analyzed Retailers

	Discounters		**Regular Supermarkets** with strong retail brand proliferation	
	Alpha	**Beta**	**Gamma**	**Delta**
Annual Turnover (in billion EUR), 2012	52	42	48	45
Number of stores in Germany	4305	3 232	15700	13 000
Number of stores internationally	4017	5813	1000	Closes international activities with less than 300 markets remaining in Scandinavia
Market Share in Germany in %	app. 21	app. 21, 4	15,7	21
Private Rules	**BSCI**		**BSCI, IFS, Proprietary Standards**	

Alpha and Beta are the strongest 'hard discounters' on the German market (Axel Springer, 2012) whereas Gamma and Delta are the two largest supermarket retail chain operators, each reaching an annual turnover of over EUR45 billion.

Over the past five years, these retailers have faced a number of high-profile food scandals that proved the practice of 'only' transferring risks to direct suppliers via contracts as dangerous to the retailers' profits and reputation, especially in the course of retail brand proliferation. Transferring risks to suppliers merely offered the chance of lowering the *impact* of risks, such as the liability for product quality, but did not actually lower the *probability* of the risk appearing in the first place.

In order to address the issue of risk *probability*, the retailers Gamma and Delta decided to individually develop private rules that specified in detail the product quality, processing, packaging, transportation and labeling requirements and in addition required suppliers to prove adherence to these standards via retailer audits. These 'private rules' were communicated via GTCT that served as the sole basis for all contracting undertaken by the retail chains. Hence, a supplier working for multiple retailers had to undergo up to 17 audits a year (Wellik, 2012) and the retailers had created whole divisions dedicated to monitoring supplier compliance with their own standards. However, the 'private rules' system implemented by each retailer individually, soon became prohibitive in terms of costs and efficiency in reaching the goal of reduced risk probability for several reasons:

First, developing, updating private rules and monitoring the compliance of all (direct) suppliers proved to be prohibitive given the competitive pressures upon retailers to increase efficiency.

Second, the attempt to capitalize on global sourcing and processing, exposed the need to ensure *suppliers anywhere in the business network* operating in different countries and subject to other jurisdictions, were adhering to the same high product and processing

[1] The names of the retail companies had to be disguised for reasons of confidentiality.

standards as those audited by the retailer directly. The urgency to ensure whole supply networks are adhering to Western standards increased as consumer groups and individual buyers demanded higher transparency of where the products came from, how they were processed and increasingly, under what *social and environmental* conditions they were produced.

Third, German retailers were finally held accountable by consumers for offering unsafe products or products produced under unethical conditions, even if the products were correctly purchased according to German trade law and the retailer had no power or legal right to interfere in the plantation owners' or manufacturer's working policy. Nevertheless, the retailers were subject to NGO and media attention, and feared further damages to reputation and that of their retail brand products triggered by food safety and quality lapses anywhere in the supply network.

Finally, governmental regulations in the EU and elsewhere passed in response to food scandals had a significant time lag lapsing between the proposal of new laws and their implementation, and turned out to be porous when applied to global food chains.

Hence, responding to leaking public regulations and competitive pressures, retailers rely more strongly on *flexible* 'private rules' that know no geographic boundaries and address those risks that globally operating retail chains were exposed to. Codifying the 'private rules' in GTCT, the retailers hedge against risks resulting from:

(1) deficient product safety and quality;
(2) deficient packaging, labeling and transportation;
(3) supply shortage or untimely supplies;
(4) price increases due to changing global commodity prices;
(5) infringement of their intellectual property rights over brand, recipes and private rules and differences in data protection;
(6) inadequate social and environmental standards of (sub-) suppliers;
(7) changes in supplier structure or a supplier's subcontracting networks;
(8) force majeure events;
(9) dependence on single suppliers, logistics or packaging partners;
(10) differences in jurisdictions, relevant in case of litigation and enforcement of GTCT.

In order to better understand the exact ways retailers hedge against these risks, we provide an illustration of a GTCT document, where we add to the type of clause in the left column the addressed risks:

Table 3: Illustration of Risk Hedging Practices Codified in Retailers' GTCT

Illustration of GTCT	
Chosen Standards	**Business Social Compliance Initiative (BSCI), International Featured Standards (IFS) most current version 6 (amended March 2013), Retailer's Proprietary standards**
Scope of Application *Risks: 1,2,6,10*	(1) GTCT are applicable to all further contracts, unless certain clauses are explicitly excluded. (2) Retailer's GTCT supersede any contract partner's (CP) GTCTs, no terms of CP's GTCTs are accepted, unless the retailer has decided otherwise in writing. (3) The CP may not pass on the performance of agreed duties to a 3rd party, unless he has gained the retailer's written agreement. (4) All changes to the conditions stated must be made in writing.
Delivery *Risks:2,3*	(1) Delivery dates are fixed dates and have to be meticulously complied with. (2) The CP has to immediately inform the retailer in case of any delivery disruptions, potential duration, cause of disruptions and the next possible delivery dates. (3) The retailer may claim damages of up to 5% of the net price of the missing delivery on top of its right for compensation. (4) The CP has to stock product deliveries for up to 10 retail outlets.
Warranties	The CP guarantees that

Risks:1,2,5	(1) the products conform to all legal specifications and all specifications defined by the retailer; (2) the products conform in terms of contents; construction and labeling to any legal requirements for the German market or another specified destination market; (3) the products do not infringe any rights of a 3rd party. In case the CP has infringed the rights of any 3rd party, he is responsible to free the retailer from any claims by that 3rd party immediately. (4) The retailer will practice due diligence and notify the CP (orally or in written form) immediately **[meaning within two weeks]** of any infringements. (5) The CP cannot claim the retailer to deficiently practice due diligence if the deficiencies discovered have been known by him or could have been overlooked only in case of culpable negligence.
Pricing *Risk:4*	The prices agreed in framework contracts are fixed maximum prices that are valid for the duration of the contract.
Claims for damages, Recall, Compensation *Risks:1,2,5*	In case the product quality does not meet the retailer's specified requirements and/or those required by law, the retailer has the right to demand (1) supplementary performance, (2) rectification of defects, (3) compensation deliveries, (4) removal of products (at CP's expense). In case the CP cannot or does not perform, the retailer will remove the delivery at the expense of the CP. In case of deficient product delivery the retailer may demand full refund of already paid products. The CP has the duty to protect the retailer from any claims for damages resulting from 3rd parties caused by defect product deliveries by the CP.
Contracting alternative suppliers *Risks: 1,7*	(1) The CP may subcontract any of his contractual duties towards the retailer only with the retailer's written agreement. If the CP has to switch suppliers of any ingredients required for a product supplier to the retailer, the CP has to inform the retailer of this change within 7 working days.
Crisis Management *Risks: 1,7*	**Crisis management, recall and public warning, damage claims and compensation for image damages** (1) The CP guarantees to have a functioning crisis management system (CMS) in place. This CMS has to clarify the responsibilities in crisis situations within the company, the information flow and access during non-office hours to guarantee a smooth crisis handling. The retailer must be given all relevant and updated contact details of the company's crisis manager(s) in charge. (2) In case of product recalls- that are not retailer brand products – the manufacturer must inform the retailer's purchasing department in writing immediately of the affected products and the reasons for recall. The CP has to cover all recall costs. (3) The CP is responsible for managing the recall. (4) If public authorities reasonably claim that a product poses health risks, the retailer may refrain from any future transactions with that CP and the CP will be responsible for removing all already ordered and/or delivered products. The same applies if the health risks are alleged and claims have reached the public media. (5) For every product recall due to product deficiencies, the CP owes the retailer a lump-sum amount of EUR 25 per retail outlet [of which there are above 12 000, thus adding up to EUR 300 000 in fines] In case of public product recalls authorized by public authorities due to deficient products, the CP owes the retailer a lump-sum payment for image damages of EUR 100.00,00. This fee can only be waived if the product deficiencies are not attributable to a fault of the CP.
Product Quality, Composition, Documentation *Risks: 1,2,5*	(1) The retailer imposes strict and detailed product specifications. Product quality is tested systematically by independent laboratories, and retailer-internal sensory examinations. (2) The retailer reserves the right to conduct CP audits itself or instruct 3rd party audits (3) The retailer directs attention to product group related quality standards. I.e. in the case of fruit/vegetable supplies, the retailer accepts "a maximum of 70% of the legally permitted MRLs. For the retailer's own retailer brand, the retailer has stricter regulations: The maximum accepted residue levels are 50% of those legally admitted in Germany. The retailer is proud to achieve in fact MRLs of 30% of those legally admitted in Germany. To monitor the MRL development, the retailer runs a proprietary database where all values are plotted and can serve as a rapid alert system in case any values increase. (4) The CP guarantees that all products fulfill the national food requirements of the destination market; if no specific market is detailed in the contract, the German regulations apply. (5) The CP guarantees that all products delivered to the retailer comply with the German requirements outlined in the LFGB (Lebensmittel- und Futtermittelgesetzbuch); the Rückstandshöchstmengenverordnung and all other food regulations and competition law. All relevant products need to fulfill the safety requirements of VDE-TÜV-GS-CE. (6) **1st, 2nd and 3rd party inspections:** The retailer may engage in product inspections anytime or assign a

	third party to carry out the product inspections. Raw materials used for the final product manufacturing may be inspected as well on a separate basis. The CP is exclusively responsible for any product or raw material deficiencies found by the retailer or another inspecting authority. Therefore, the CP has to implement constant product quality inspections himself as well.
Compliance with social, ethical, environmental standards and quality management systems *Risk: 6*	▪ **BSCI standards, including:** **Preamble:** ***The CP has to ensure that all his CPs and sub-contractors comply with BSCI standards.*** 1. *Compliance with legal regulations:* All enforced laws, regulations and minimum industry standards have to be enforced. In case of legal requirements, the CP has to ensure the enforcement of the strictest conditions. In agricultural matters the ILO 110 convention shall be implemented." *2. Freedom of Association & Right to Collective Bargaining* *3. Prohibition of discrimination* *4. Remuneration* *5. Working Hours* *6. Health and Safety at the Workplace* *7. Prohibition of child labor* *8. Prohibition of certain disciplinary practices* *9. Prohibition of forced and compulsory labor* *10. Environmental and safety concerns* *11. Management systems*
Product liability, Insurance *Risks:1,2,7*	(1) The CP is liable for any product defects and has to cover all costs for product recall, removal from stock and shelves. (2) The CP has to provide us with the *extended* product liability insurance that has to cover a reasonable product volume and has to reach the minimum of EUR 2.5 million. The CP has to provide the insurance within 4 weeks of the request.
Property rights *Risk: 5*	(1) The retailer reserves property rights over any documents, calculations and pictures. No 3rd party may see or access these materials without the retailer's written consent. (2) Reservation of proprietary rights: The retailer owns the products even in case of recall until all payments are fulfilled by the CP The CP frees the retailer of any claims for damages, product liability, claims of material defects and compensation for personal suffering from third parties, when the cause of the claims lies with the CP.
Transportation and packaging *Risk: 2*	(1) The CP must conform to the "Grüner Punkt" requirements for packaging (2) The CP is liable for any deviations from regulations for packaging defined by the EU or the German regulatory body for packaging; in case of infringement of packaging regulations, the CP has to take full responsibility and frees the retailer of any claims Disposal of packaging: The retailer will dispose of the transportation packaging and the CP will refund the retailer for this activity.
Traceability *Risks: 1,2,6*	(1) The CP must guarantee the continuous and complete traceability of all product parts and processes according to the EG Nr 178/2002 and any future regulations. Objects of traceability are apart from the product itself all ingredients (raw materials, additives), the time of processing, the packaging materials and the manufacturing processes. (2) The CP is responsible to provide all required information to the buyer and the authorities if he is asked to, such as in the case of a customer complaint or any objections raised by authorities. (3) The retailer specifies the data the CP has to provide on products in questions (charge number; where stored, for how long, ingredients' origins etc)
Information clause *Risks:1,2,6*	(1) The CP guarantees to inform the retailer immediately in case any product deficiencies are identified during tests made by Stiftung Warentest or Öko-Test. (2) Joint interface to share product data between the retailer and CP (the CP has to enter product data into a joint database that works as a private rapid alert system)
Force Majeure (FM) *Risk: 8*	(1) FM frees both parties of any duties for the time of the incident. Both parties are required to inform each other as far as the situation allows of the time, the nature, the scope and duration of the incident and to adapt their contractual responsibilities to the best of their knowledge and in good faith. (2) The retailer may reject any orders if the demand for the delivery decreased due to the FM incident. (3) Other contractual and legal rights of the retailer are not affected by this clause.
Customer Data *Risks:5,9*	(1) The CP guarantees to comply with all recent German data protection regulations. (2) The CP guarantees to have sufficient data protection measures in place to protect any confidential documents exchanged as part of the agreement. (3) The CP guarantees the retailer or a 3rd party assigned by the retailer to inspect its data protection measures at least on yearly basis. In case of non-compliance, the CP will pay damages of a minimum of 0.15% of the annual contract volume, or a maximum of 5% of the annual contract volume
Severability	Invalidity of one or more clauses will not affect the validity of the agreement as a whole.

Clause *Risk: 10*	
Termination *Risk: 9*	The retailer reserves the right to terminate contracts immediately in case the CP (a) breaches the contract, (b) or the CP is subject to insolvency.
Confidentiality *Risks:5,7,10*	(1) Both parties agree to keep trade secrets confidential. (2) The CP may not share any trade secrets originating from contracting with the retailer, with his CPs unless what is necessary for the 3rd party to complete its business. (3) The CP agrees to return any documentation originating from engaging in business with the retailer to the retailer as soon as the contract expires. Data storage media are to be destroyed using CP's data eraser programs. (4) The CP is liable for any damages resulting from the use of trade secrets and data originating from the exchange with the retailer. The CP is liable for the acts of his employees, subcontractors, CP's and freelance contractors.
Venue, Court of jurisdiction *Risk:10*	(1) The exclusive court of jurisdiction is the German court of 'town X'. However, the retailer reserves the right to sue the CP at his local venue. (2) The contract is subject exclusively to the law of the German Federation, excluding the provisions of the United Nations Convention on Contracts for the International Sale of Goods, CISG.

In the next section we aim to demonstrate that the risks dealt with in the GTCT are typically addressed by a combination of risk hedging practices, including: (1) intervention, (2) transfer, and (3) protection practices. The GTCT provide a platform for companies to set out 'private rules' that govern intervention, transfer and protection. 'Private rules' comprise all governmental regulations and *a retailer's selection* of collective industry standards and his own proprietary standards. In the GTCT stated above, the retailer refers to the EU and German national law; the "International Featured Standards" (IFS) and the Business Social Compliance Initiative (BSCI) in addition to his own specifications. These IFS and BSCI are collective industry standards, also referred to as 'voluntary standards' or even the 'private food law' that have been developed by a European retailer consortium including Alpha, Beta, Gamma and Delta. Both initiatives have been established in 2003 as a response to multiple meat scandals across Europe and the EU's proposal for a new European Food Law that came into force in 2004.

We suggest that the 'private rules' are an effective framework for addressing risk probability and risk impact by enabling the risk hedging practices of *intervention, transfer and protection*. The first two risk hedging practices elaborate on the concepts of intervention in quasi-integrated business relationships and transfer of risks through private contract law as mentioned in studies on umbrella agreements. The protection practice aims to secure primarily uninsurable assets from risks and builds on private contract law, but has not been addressed previously in research on risk in business networks.

Intervention: Minimizing Risk Probability

The majority of the above listed risks, including risk resulting from product safety and quality issues, deficiencies in packaging, labeling and transportation, the adherence to Western social and environmental standards need to be addressed beyond the first-tier of direct suppliers. Since the introduction of high-tech systems for tracing maximum residue levels (MRLs) or even DNA, retailers need to ensure that compliance to high product, processing and transportation standards is in place starting from the origins such as animal feed or soil composition. This is accomplished by GTCT provisions that draw heavily on collective retailer standards and aim to reduce the probability of the risk occurring in the first place by effectively intervening into a business actors' production or even management system by dictating 'best manufacturing practices' that are subject to audits.

In the quoted GTCT, retailers Gamma and Delta require adherence to BSCI, IFS and its own proprietary standards. The IFS is a horizontal standard that provides detailed specifications

for different stages of the food supply network, such as IFS Logistics, IFS Broker, IFS Packaging or IFS Cash & Carry. Companies operating in the food supply network around the globe, wishing to supply a German retailer must be certified according to the set of a retailer's 'private rules' prior to being considered for negotiation. Hence, whereas retailers prior to 2003 tried auditing their direct suppliers through own 'retailer certification' schemes, now retailers outsource the certification process to third parties, such as Det Norske Veritas (DNV) to carry out the auditing at the expense of the CP. A closer analysis of the certification schemes shows that achieving compliance with these schemes frequently requires 'voluntary intervention' into the CP's business.

The BSCI is a 'vertical standard' since it addresses business conditions across several stages of the food supply network, requiring all actors to comply with codified 'best practices' in terms of social and environmental standards. We outline the proliferation of the vertical IFS and horizontal BSCI standard across the food supply network below: The orange spots denote the stages at which audits are conducted at the request of the retailer:

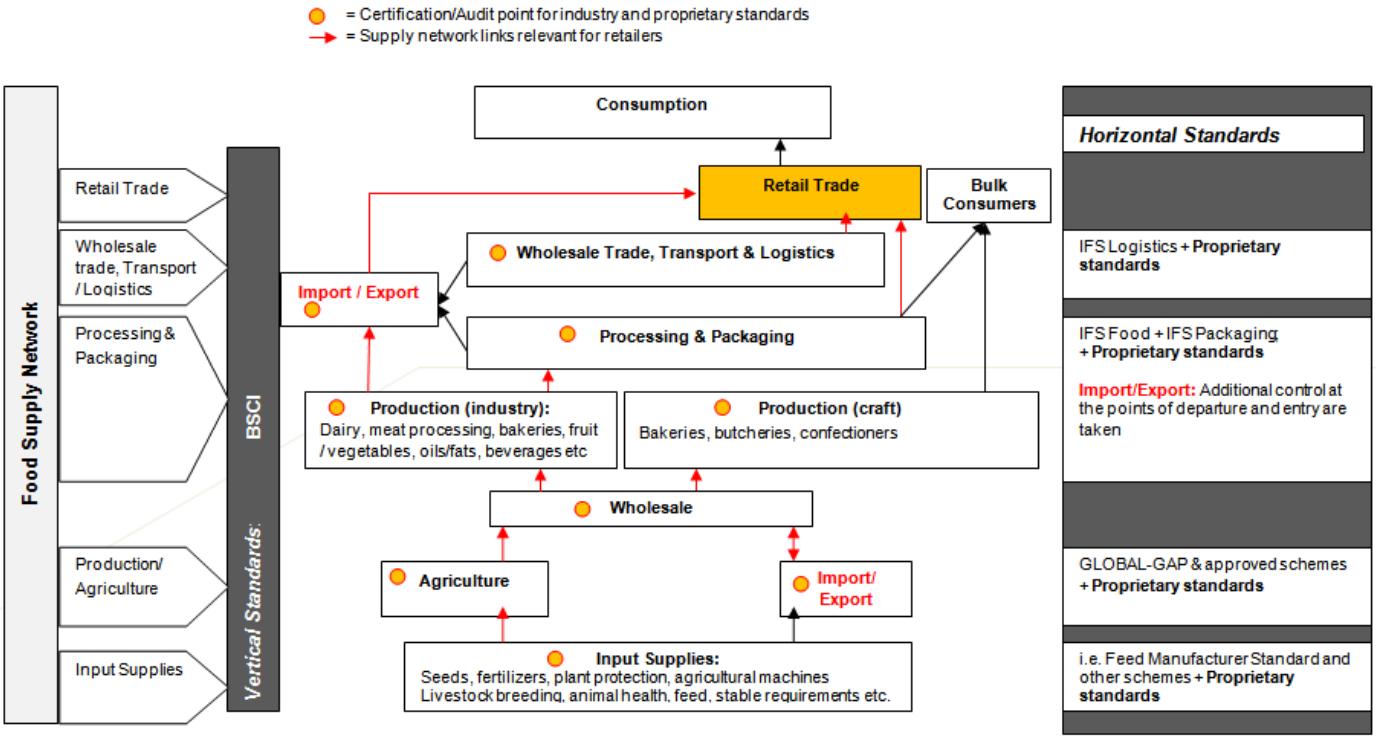

Figure 1: Simplified Overview of the Certification System in the Food Supply Network. Developed and adapted from Strecker, 1996; Willems, Roth & Roekel, 2005; Will & Guenther, 2007.

Hence, adherence to collective industry standards developed by the retail consortium not only reduces the costs of auditing for the retail chains, but allows intervening into almost all processes of food handling throughout the supply network. In this respect, including private industry standards in the GTCT allows reducing the probability of risks emerging in the first place, as only actors reaching a certification and hence producing to agreed standards are eligible for contracting. The power asymmetry in the food supply network allows the retailer then to impose proprietary standards in addition to industry standards to retain a competitive advantage in terms of product quality specifications in comparison to other retail chains. These 'proprietary standards' are stricter than public food law requirements and even some industry standards. This is most evident in the above documented GTCT's product quality requirements, where the retailer states to accept *"a maximum of 70% of the legally permitted*

maximum residue levels (MRLs). For the retailer's own retailer brand, the retailer has stricter regulations: The maximum accepted residue levels are 50% of those legally admitted in Germany. ... To monitor the MRL development, the retailer runs a proprietary database where all values are plotted and can serve as a rapid alert system in case any values increase."

In addition to standardizing the product quality and processing requirements in the supply networks across nations, this certification system helps retailers hedging against dependencies on single suppliers and in fact minimizes switching costs, as quality, processing and business conduct are standardized.

Drawing on multiple sources of evidence, we provide an abridged sample of our abductive data analysis process that crystallizes the concept of 'intervention':

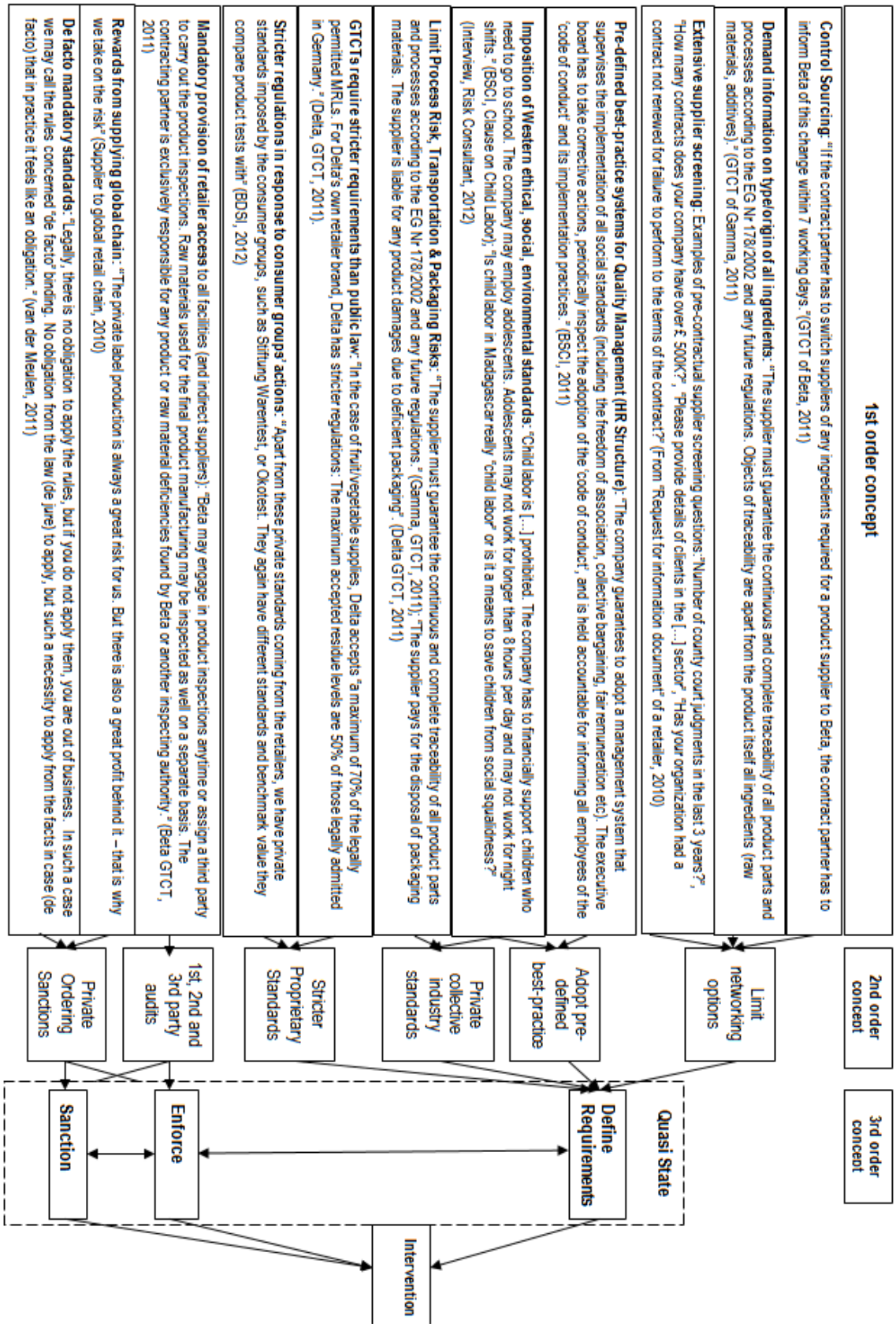

Figure 2 Abridged Illustration of Abductive Data Analysis, Intervention Concept.

Johnsen and Ford (2005) as well as Johnsen et al (2008, p.74) refer to the intervention strategy as a "customer intervening in the supplier's operations to tell it how to conduct its business. While it is welcomed by the supplier in many cases as a genuine opportunity to learn from a better equipped organization, the principle behind the intervention … [is still one

of control]". Indeed, adherence to private industry or proprietary standards has contributed in particular in developing countries to higher social and environmental standards and significantly reduced the number of recalled products (Wellik, 2012). Elaborating on Blois' (1972) concept of quasi-vertical supplier integration, it is reasonable to say that the nature of the current intervention strategy moves beyond quasi-integrating first-tier suppliers to quasi-integrating whole supply networks with the help of third party certification schemes based on standards developed by the retailers. Indeed, the use of industry certification schemes, enhanced by high power asymmetry in the food retail sector resembles the formation of 'quasi states', where the retailers define the rules, enforce the rules and sanction accordingly for non-compliance. Metaphorically speaking, the retailers take over the legislative force, the certification bodies perform the executive force and the judicative force is performed collectively by retailers, certification bodies and national jurisdictions.

Despite the powerful 'quasi-state' formation, relying on private industry standards 'only' reduces the probability of risks occurring, and does not yet minimize the risk impact. Moreover, some risks, such as changing commodity prices or shortage of supplies cannot be mitigated by intervention practices alone. The impact of risks typically negatively affects a retailers' competitive position, as any of the above stated risks may result in sales losses and damages to business and brand reputation. Therefore, we suggest that the GTCT provide a complementary, second mechanism to the one of intervention, termed 'risk transfer'. 'Risk transfer' reduces the impact of risks that have been already addressed via intervention practices and help addressing risks that cannot be mitigated by intervention at all.

Transfer: Minimizing Risk Impact

The practice of risk transfer elaborates on the concept of private contract law that lies at the base of umbrella agreements. Other authors refer to risk transfer also as "cascading" (Johnsen, Lamming & Harland, 2008, p.74). The practice of risk transfer aims to minimize the negative impact of risks which may have already been identified and addressed through intervention strategies. The aim of transfer practices is to shift the liability for risks occurring to the contract partner, who in turn may shift the risk further down on his sub-contractors. For instance, operating in global networks exposes retailers to changes in raw material prices. However, settling the condition that all agreed prices (elsewhere in umbrella contracts or ordering documents) are fixed, requires the business partner to absorb the price changes or transfer this change further down. Similarly, retailers fearing the infringement of their product quality specifications such as their product recipes or packaging requirements can transfer the impact of this risk upon their business partners and sanction infringements happening anywhere in the business network by holding the business partner financially responsible for the losses. This mechanism is particularly evident in the GTCT defining the parties' liability in cases of product quality issues or negative media coverage. Hence, the retailer aims to minimize the negative impact of risks in terms of costs by quantifying the business partner's liability for the consequences of risks. The GTCT of Gamma (2011) illustrate such a case in stating that *"if the product is subject to a warning or recall by the supplier or transport partner, his subcontractor or manufacturer, the supplier will be liable for any costs resulting from this action, including the recall of the product" (Gamma, GTCT, 2011).*

Moreover, the transfer practice allows the retailer to quickly dissociate from business partners, who may tarnish the retailer's business or brand reputation and even reserve the retailer the right to still ask his current business partner for alternative suppliers.

Similarly to the intervention strategy, we illustrate the substance of the transfer concept by providing a sample of the abductive data analysis below:

1st order concept	2nd order concept	3rd order concept
Set GTCT and contract conditions unilaterally and detailed: Only retailers' GTCT are valid, no negotiation of contracts: "Alpha's GTCT supersede any supplier's GTCTs, no terms of supplier's GTCTs are accepted, unless Alpha has decided otherwise in writing." (Alpha's GTCT, 2010)	**Liability for outcome and process** of production resulting of supply networks	**Legal Risk**
Transfer liability for product & process quality to supply chain captains/ 1st-tier suppliers: "If the product is subject to a warning or recall by the CP or transport partner, his subcontractor or manufacturer, the CP is liable for any costs resulting from this action, including the recall of the product." (Gamma, GTCT, 2011)		
Transfer liability for product & process quality to certification institutes, plus reserve right for access: "Beta may engage in product inspections anytime or assign a third party to carry out the product inspections. Raw materials used for the final product manufacturing may be inspected as well on a separate basis. The contracting partner is exclusively responsible for any product or raw material deficiencies found by Beta or another inspecting authority." (Beta, GTCT, 2011); "Delta is free from manufacturer and product liabilities." (Delta, GTCT, 2011)		
Transfer 'due diligence' duty required by law:" Moreover, some companies even impose in their contracts the clause that frees them from due diligence. It means, they are shifting all liability and associated risks related to product safety to the supplier. If anything is wrong with the product, he'll be liable for any damages resulting from that, at a stage, where his product may have become part of a larger system and created greater damages. This is inhumanely great risk." (Lawyer (1), 2012)		
Unilateral decision on choice of jurisdiction (exclusion of international law), freedom to sue at retailers' HQ court or suppliers' HQs: "The exclusive court of jurisdiction is the German court of 'town X'. However, Alpha reserves the right to sue the contract partner at his local venue. The contract is subject exclusively to the law of the German Federation, excluding the provisions of the United Nations Convention on Contracts for the International Sale of Goods, CISG." (Alpha GTCT, 2010); "The economy does not require [international law]. I mean the EU repeats that they need international regulations for international business, but given the free choice of law, it is totally superfluous. So, I take a proved and tested law that is fully administered and does not leave many matters of dispute. These matters of dispute accumulate extremely fast if I would take international law; if I would introduce an untested regime." (Lawyer (2) , 2010)		
Insurance: "The supplier has to provide us with the *extended* product liability insurance, that has to cover a reasonable product volume and has to reach the minimum of EUR 2,5 million.." (Delta, GTCTs, 2011); "The problem with shifting risk is that the actors, such as REWE or their suppliers shift risks to an intermediary, such as an insurance and hope that they will deal with it. If it does not work out, the supplier is liable; however, he has usually not the recoverable assets needed to cover the insurance properly." (Lawyer (1), 2012)	**Risk to financial performance** (Direct/in-direct costs)	**Transfer**
Financial risk resulting from product recalls, destruction of products: "In case Gamma has to implement a product recall, the supplier has to refund Gamma any costs incurred, including: administration costs, logistics costs per package; disposal. (Gamma, GTCT, 2011)		
Payment for reputational damage (media, consumer impact): "In case of the delivered products are not demanded due to negative media coverage, the contract partner is responsible for taking back the products without compensation of its purchasing price." (Alpha GTCT, 2010); "In case of real or alleged product safety issues and warnings becoming public- particularly through the media- affecting also similar products or contents, Gamma may cancel any future orders and return any products already delivered for up to one month after the first publication. Gamma will receive refunds for all ordered but not sold products." (Gamma, GTCT, 2011)	**Reputational Risk**	**Business Risk**
Dissociation from supplier (unilateral media strategy, quick supplier switching): "Unjustified claims of product defects or product manipulation can lead to media coverage. The contract partner consents to Alpha taking action it deems necessary also in his name to counter such reports. The contract partner is obliged to do everything, and omit nothing to protect Alpha from damages to reputation and business." (Alpha, GTCT, 2010)		
Competition on quality; Retain and limit access to proprietary standards: "The supplier agrees to return any documentation originating from engaging in business with Delta to Delta as soon as the contract expires. … The supplier is liable for any damages resulting from the use of trade secrets and data originating from the exchange with Delta. The supplier is liable for the acts of his employees, subcontractors, suppliers and freelance contractors" (Delta, GTCT, 2011); "For Delta's own retailer brand, Delta has stricter regulations" (Delta, GTCT, 2011)	**Competitive Risk**	
Competition on Price: Settling fixed maximum prices so that supplier has to cascade or absorb higher prices in supply: "The prices agreed in framework contracts are fixed maximum prices that are valid for the duration of the contract." (Beta, GTCT, 2011)		

Figure 3 Abridged Illustration of Abductive Data Analysis, Transfer Concept.

Previous studies tended to research the concepts of intervention and transfer separately, whereas this research shows that these practices when applied to risk hedging are closely interwoven: The liability for those risks identified and addressed through intervention strategies, is likely to be subsequently transferred. However, while intervention and transfer practices provide already effective means for retailers to minimize risk probability and impact, there are still risks affecting intangible assets that are difficult to quantify and yet may have a devastating effect on the retailer's business: These risks include primarily the damage to uninsurable assets, such as business reputation, stock price and brand value. The GTCT address these risks to 'uninsurable assets' by capitalizing on 'asset protection', which is discussed next.

Protection of 'Uninsurable' Assets

Despite the retailers' top priority to hedge against risks resulting from product safety, quality, quantity and price, there is a strong concern for risk prone assets that are not insurable (in contrast to product liability risks) and are not easily quantifiable so that transferring the costs becomes impossible. The 'uninsurable' assets include the business' brand value (which significantly increased in importance since the retail brand proliferation) and business reputation as well as stock price volatility.

The 'protection' practice combines the possibilities provided by private contract law with private ordering (Williamson, 2002). Protection by private contract law refers to the rights and liabilities a national jurisdiction provides for private parties to base their contractual agreements upon. Protection by private ordering refers here to protection by means of business practices that may take on various forms, such as threatening current suppliers with immediate contract termination in case of infringing the retailer's requirements for data protection; or co-operating with selected public media to reduce the negative impact on brand value in case of food safety reports. Hence, protection by private ordering is not limited to the GTCT agreed between the retailer and his respective supplier networks. However, the GTCT may reserve the retailer the right (by private contract law) to act in the name of the supplier in case of negative media reports to contain the damage resulting from media coverage to its own brand. Similarly, requiring suppliers to comply with 'voluntary' standards prior to entering in any negotiation is a way of private ordering that aims to lower the probability of risks that may indirectly impact the 'uninsurable assets'.

To better understand the practice of risk hedging by protection, we provide a sample of the abductive data analysis substantiating this concept, below:

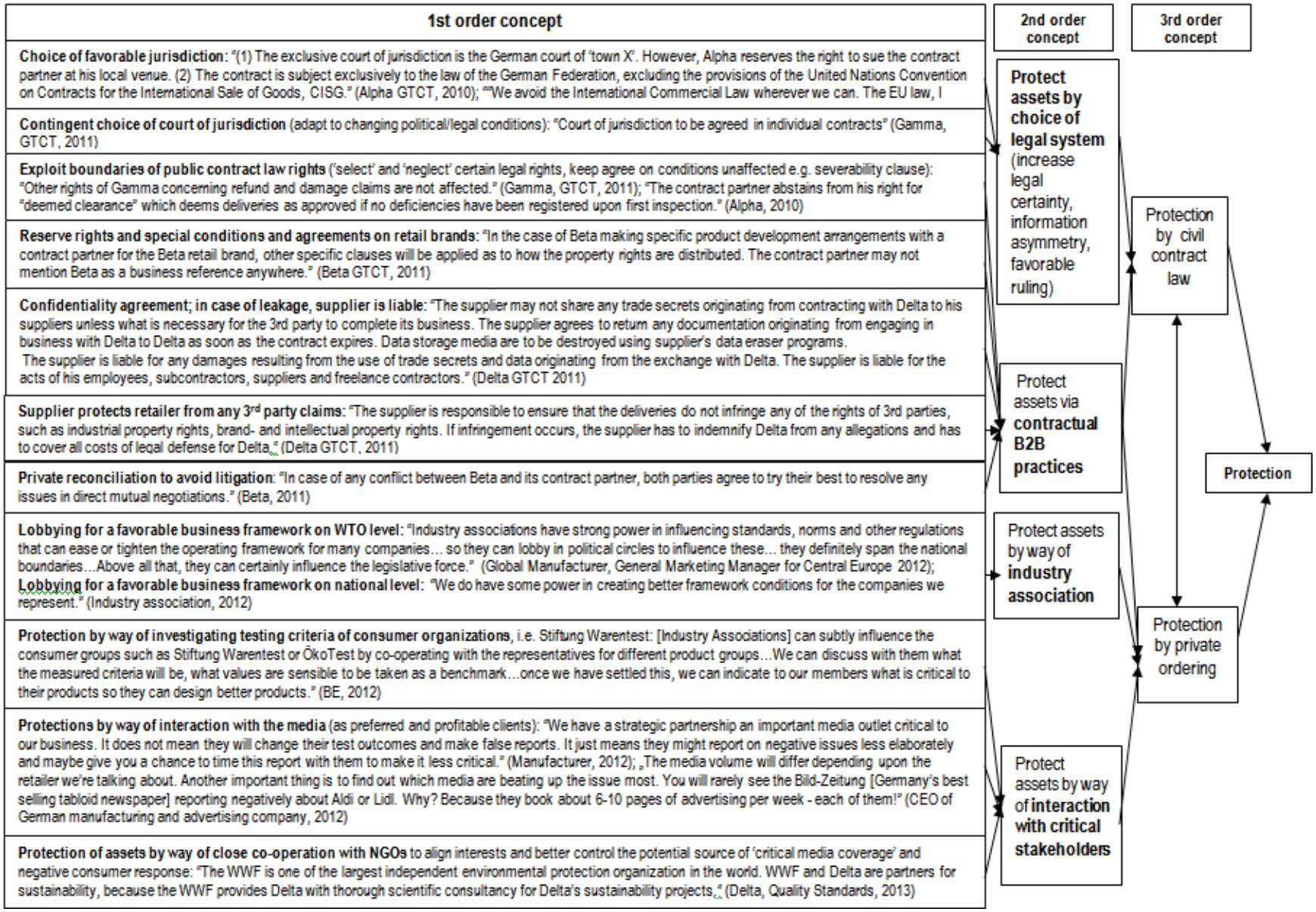

Figure 4 Abridged Illustration of Abductive Data Analysis, Protection Concept.

As a result, the intervention, transfer and protection practices for risk hedging codified in the GTCT provide a strong mechanism in the asymmetric food business network that (1) combines global sourcing at competitive prices, yet allows minimizing the *impact and probability* of risks in the first place; (2) further exploits the current investments in developing proprietary requirements, but allows a more efficient implementation of auditing and certification schemes; (3) creates a broader range of 'safe', high quality suppliers to enable retail chains switching suppliers more easily than the system of 'proprietary audits' allowed to date; (4) and finally, is flexible enough to adapt to rapidly changing regulatory requirements and consumer preferences.

On the one hand, the GTCT are of particular value for the stronger party, because framing and standardizing the terms and conditions, allows the stronger party to "institutionalize the asymmetry" (Mouzas & Ford, 2004, p.36) between them and their business partners across the business network. On the other hand, particularly business partners in less developed markets benefit from learning to produce to up-to-date standards required by the retailer, as these standards are typically more efficient (once implemented) and pose less risks to work safety and the environment.

The three risk hedging practices – intervention, transfer, and protection – are strongly interwoven to enable minimizing risk probability and impact of insurable and uninsurable assets. Our model of risk hedging in global food supply networks depicts the three practices as context contingent and dynamic concepts that are constantly subject to adaptation in light of new food scandals, changes in governmental regulations and consume demands:

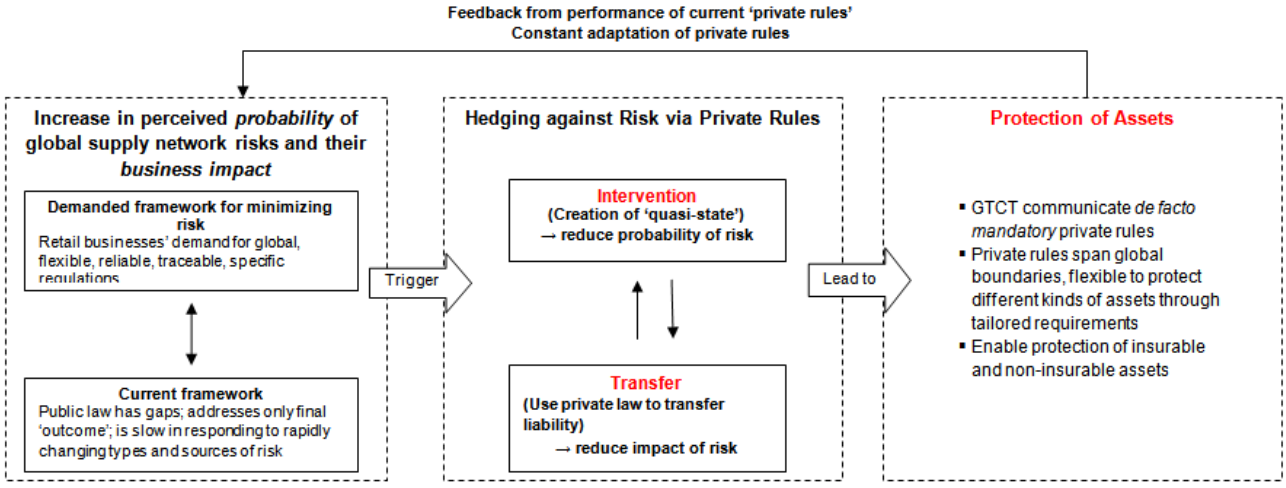

Figure 5 Process Model of Risk Hedging Practices in Business Networks

The private rules codified in the GTCT enable all three kinds of risk hedging practices via its powerful combination of Euorepan and national private contract law; the collective industry standards and proprietary retailer standards with global application. Hence, the private rules manage to span the geographical boundaries of national jurisdictions, making the 'intervention, transfer and protection' practices a valid tool to address supply network risks emerging even in distant parts of the network.

Thus, the model enhances our understanding as to h*ow* companies hedge against risks in global networks, by outlining the 'intervention-transfer-protection' practices. However, committed to the assumptions of a realist worldview, it is essential to ask *why* these practices emerged, or better: what *processes* are accountable for the identified risk hedging practices? We suggest that a potential process triggering the observed outcomes of intervention, transfer and protection is 'risk mitigation'. 'Risk mitigation' describes the actors' motivation to develop and engage systematically in practices (such as intervention, transfer and protection in combination or selectively) in order to minimize the probability and impact of identified

risks. We hope that this analysis may add to the previously suggested dynamics of underlying processes developed in realist inspired case studies and will add to the explanatory depth of the current research.

CONCLUSION AND IMPLICATIONS

The research is one of the few ventures taking a business network perspective to understanding how companies deal with risks inherent in global networks. Particularly, the study sheds light on (1) how companies hedge against inevitable risks arising from operating in global networks and (2) what processes are accountable for the identified risk hedging practices.

Addressing the first question, the study illustrates the development of risk hedging practices codified in 'private rules' and communicated predominantly via GTCT that companies employ to reduce network risks not only in inter-organizational relationships, but whole business networks. Private rules allow the more powerful party hedging against network risks by (1) standardizing direct *and indirect* supplier relationships; (2) setting very high standards to ensure superior product and service quality; (3) transferring liability for product quality, quantity or delivery failure; (4) and balancing control over suppliers with flexibility to interchange suppliers in order to achieve better deals every time.

Strong competitive pressures of retail consolidation, increasing consumer demands for low price yet high quality food and regulatory demands for sustainable and accountable business practices, strikes companies to choose between 'lowest cost at any risk' and 'no risk at any price' (Newing, 2012). 'Private rules' codified in GTCT respond to this dilemma by manifesting the terms and conditions that mitigate risk probability and risk impact. Specifically, private rules enable the practice of three interrelated risk hedging practices comprising intervention, transfer and protection.

Whereas previous forms of quasi-integration and business contracts addressed intervention in quasi-vertically integrated relationships with direct business partners, the concept of 'private rules' enables the quasi-integration of whole supply networks. Indeed, the codification of requirements, their enforcement through certification schemes and sanctioning through public contract law and private ordering suggest that the private rules are constitutions of 'quasi-states' that govern whole networks across national borders in order to enable multinational retailers to stay competitive and cope with the challenges of global food networks.

In addressing the second question of what processes are accountable for the risk hedging practices of intervention, transfer and protection, the study adds an explanatory dimension in realist terms by identifying the causal mechanism of 'risk mitigation'. It is suggested that the underlying process accountable for the observed risk hedging practices is the actors' motive of risk mitigation. In identifying this causal mechanism, this study adds depth to the analysis of risk hedging practices by answering not only 'how' companies hedge against risks, but also suggesting *why* the observed risk hedging patterns emerge.

These analytical findings translate also into relevant implications for business practice. Based on multiple types of up-to-date empirical evidence, this study provides first insights on risk hedging practices beyond the relationships with direct business partners and addresses the potential of 'private rules' in addressing risks emerging from managing in global networks. In light of the fact that most companies are already embedded in global business networks and that rapidly developing information and communication technologies enhance this process as well as its transparency and risks, this study wishes to communicate two key implications for management practice: First, at the basis of hedging against risks lies the assumption that companies understand relevant risks and can identify them. At this stage, adopting a business

network perspective is crucial for companies to identify risks that may be looming beyond their direct business partners. In the case of the food industry, even feed suppliers need to be considered as potential risk factors by retailers, as the quality of feed may decide over the meat quality that retailers will be finally held accountable for. Second, companies are advised to review the tools they employ for risk hedging. The common assumption that if "'I have an expectation of how risk should be managed through the supply chain, everybody should be managing it that way' […] is a horrible assumption" (Wilding, in Gray, 2012, p.1) because it assumes similar standards across global markets. As the case demonstrates, rather than assuming standards, companies can make use of valuable tools for creating and communicating standards such as through GTCT that can help to hedge against risks resulting from global businesses based in different national markets and jurisdictions. Although the food sector provides an extreme example of power asymmetry where private rules function as 'constitutions' for whole business networks, the concept of private rules is still a valuable tool for companies to capitalize on the risk hedging practices of intervention, transfer and protection to the extent that their network position allows. Although 'intervention' in the case above has been delineated as an imposition of 'best practices' from one company onto another, intervention may also take more 'friendly' forms of mutual risk hedging by raising standards across the supply network and strengthening the 'weakest link'.

LIMITATIONS, SUGGESTIONS FOR FUTURE RESEARCH

The phenomenon of private rules in business networks is a rich and recent field for business network research that promises a fruitful cross-fertilization between business network research and management practice. The scope of the present study allowed to only tap into the complex concepts such as 'collective industry standards', 'proprietary standards' or 'certification schemes', behind each of which opens up a new network of relationships between companies, industry associations, EU regulatory bodies, NGOs and certification and accreditation businesses. Hence, from the perspective of business network research, it would be interesting to study the creation of 'collective industry standards' from the resource interaction perspective (Baraldi, Gressetvold & Harrison, 2012; Cantu, Corsaro & Snehota, 2012) to enhance our understanding of how and why large multinational companies decided to pour their knowledge on proprietary standards into a 'collective standards' and hence share their valuable proprietary knowledge with competitors?

Considering the important role of realist inspired business network research, it would be most interesting to apply the concept of structure-agency duality (Sayer, 1992) to understand the dynamics involved in the interaction of private business rules and public food law. The creation of a 'quasi-state' or a 'private food law' by businesses operating within a functioning environment of strict EU and German national regulations, suggests an intriguing, yet untapped field for further developing our understanding of structure-agency interaction. Moreover, the phenomenon of risks and hedging against risks in business networks is inextricably linked with actors' behavior. Such can be learned about actors' biases and errors by developing a behavioral network perspective that accounts for systematic imperfections in the way that business actors interact with each other.

For management practice, further research on the phenomenon of risk hedging would significantly enhance the understanding of managing risk in business networks, because of the business network view's invaluable focus on interdependency, interaction and attention to indirect actors and network effects.

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