# Contractual Networks, Inter-Firm Cooperation and Economic Growth

*Edited by*

Fabrizio Cafaggi

*Professor of Comparative Law, European University Institute and Professor of Private Law (on leave), University of Trento, Italy*

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# 1. Introduction

**Fabrizio Cafaggi**

## CONTRACTUAL NETWORKS, VERTICAL DISINTEGRATION AND INTER-FIRM COOPERATION

Historically, networks of firms have preceded the vertically integrated firm and, to a certain extent, markets, at least within the contemporary meaning, attached to this particular form of organization.[1] In this book, the focus is on networks for the production of goods and services. However, it should be underlined that contractual networks have largely been deployed to create and regulate markets. In the area of the electronic trading platform, contractual networks define the common rules that preside over the individual transactions of the members who have subscribed to the platform.[2] Contractual networks have also flourished in the area of regulated markets where technological factors may 'impose' sharing common platforms for production or more often distribution. Examples range from electricity to telecommunications, from banking to insurance.

Networks of firms have different forms, including contractual, organizational and combined. Often enterprises start with a contractual network that is perceived as a lighter form of commitment, but which subsequently evolves into an organizational network. Notice that even in the case of contractual networks, enterprises create a new company but preserve their own legal and economic independence. At other times the organizational network 'integrates' the contractual one. This combination can take different forms: in its softest version, firms make a governance agreement for a mutual interlocking directorate. Each firm, even without owning shares, has the right to appoint a member of the other firm's board. Stronger

[1] C. Sabel and J. Zeitlin, *World of Possibilities*: *Flexibility and Mass Production in Western Industrialization*, CUP, 1997, J. Zeitlin, 'The historical alternative approach', in G. Jones and J. Zeitlin (eds), *The Oxford Handbook of Business History*, OUP, 2008, pp. 120 ff.

[2] These are primarily multilateral standard contract forms designed by the 'organizer' and adhered to by the future members of the trading community.



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forms of integration between contractual and organizational networks include the creation of a company comprising the contractual partners for limited purposes, often related to financing and limited liability towards third parties. Integration also occurs for the common management of a trademark. Two or more enterprises, some involved in production and some in distribution, collectively own a trademark and create a company to regulate and coordinate activities.[3]

After a strong, yet not homogeneous, path towards vertical integration at the beginning of the last century, coinciding with the emergence of the Chandlerian model, technological and political changes, leading to greater globalization of trade and stronger interdependence among the world's economies, have produced new forms of de-verticalization with which the re-emergence of the network form is associated.[4] In particular, it is related to the transformation of the supply chain and its vertical disintegration, taking place at both the domestic and transnational level.[5] The recent financial crisis combined with some protectionist measures is again pushing towards vertical integration by providing financial incentives to enterprises in developed countries not to outsource outside their countries.

Vertical integration, even when high interdependence and high asset specificity are considerable, might not be the first-best solution, let alone a feasible way to address these issues.[6] Technology constitutes only a partial response to the risks correlated to high asset specificity and may bring about very different contractual relationships. On the one hand, modularity can sometimes outbalance asset specificity and push towards relational contracting.[7] ICT like Building information modelling (BIM),

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[3] For example a producer who owns a successful trademark but does not have sufficient capacity to distribute to create a network with one or more distributors and sell or license the trademark.

[4] See R. Gilson, C. Sabel and R. Scott, 'Contracting for innovation: vertical disintegration and interfirm collaboration', 109 *Columbia Law Review*, 431 (2009), at 448 ff., claiming that conventional contract theory cannot explain the process of networks' emergence. For similar conclusions see F. Cafaggi, 'Contractual Networks and the Small Business Act: Towards European Principles?', *European Review Contract Law* 49 (2008), and F. Gomez, Chapter 2 in this volume.

[5] R. Feenstra, 'Integration of Trade and Disintegration of Production in the Global Economy', 12 *Journal of Economic Perspectives* 4 (1998), 31–50, F. Lafontaine and M. Slade, 'Vertical integration and firm boundaries: The evidence', 45 *Journal of Economic Literature* 629 (2007).

[6] See M. Artigot i Golobardes and F. Gómez Pomar, 'Long term contracts in the law and economics literature', in G. De Geest (ed.), *The Encyclopedia of Law and Economics,* Edward Elgar, forthcoming 2010

[7] On modularity, see R. Langlois, 'The vanishing hand: The changing dynamics of industrial capitalism', 12 *Industrial and Corporate Change*, 351 (2003),

on the other hand, fosters collaboration among the participants to the project and conflicts with the current contract law approach, pushing towards the creation of contractual networks. These technologies are at odds with the traditional contractual approach which divides responsibilities among the different parties, dis-incentivizing cooperation. They redefine product and service design and promote a collaborative approach that increases the quality of product design but at the same time renders harder the allocation of responsibility among individual parties. Many of the features of product design come from subcontractors and consultants; they translate into co-design, posing intellectual property right issues as to the ownership of the design. Furthermore and for opposite reasons, liability questions arise when the design is defective and parties try to disclaim liability, blaming other participants in the network. In sum, new technologies strongly affect contracting practices but do not substitute for them. They often require radical changes in the approach to contract and to dispute resolution. They may operate as a factor driving towards higher collaboration but also towards fragmentation.

How is vertical dis-integration related to the emergence of different forms of contracting? Supply chain value is distributed in different ways giving rise to different forms of coordination depending on the distribution of market and contractual power. The transfer of value along the supply chain defines patterns of integration and determines the combination of relational contracting and networks.[8]

Vertical disintegration has taken different forms. Outsourcing and offshoring have stimulated the use of contractual networks, strategic alliances and other types of hybrids.[9] Different forms of outsourcing may generate various networks depending on whether outsourcing is complete or partial, i.e. part of the activity remains inside the firm, giving rise to co-sourcing. A second and, perhaps more important, variable is related to the phase or set of outsourced phases: whether they concern standardized processes or focus on the core, strategic activity of the firm. The increasing phenomenon of outsourcing R&D to consortia reflects changes about the necessity to keep 'strategic' functions inside the firm. New technologies

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R. Langlois, 'Chandler in a larger frame: Markets, transaction costs and organisational form in history', 5 *Enterprise & Society* 355 (2004) and the critique of C. Sabel and J. Zeitlin, 'Neither modularity nor relational contracting: Inter-firm collaboration in the new economy', 5 *Enterprise and Society* 388 (2004).

[8] See G. Gereffi, J. Humphrey and T. Sturgeon, 'Governance of global value chains', 12 *International Review of Political Economy* (2005), 78–104.

[9] See G. Geiss, 'The space between markets and hierarchies', 95 Virginia Law Review (2009), 99–153.

and other types of safeguards permit more intense forms of collaboration among firms with decreasing risk of information leakage.

We thus observe at both domestic and transnational level the co-existence of integrated supply chains with powerful multinational corporations (MNC) and less vertically integrated chains where higher fragmentation occurs either upstream or downstream. Contractual networks emerge for different reasons: often they constitute a response to ownership fragmentation and small size. The existence of regulatory and cultural obstacles to integration pushes towards the creation of networks based on independent ownership and coordinated activities.[10]

Conventional industrial organization theory distinguishes between different forms of production: markets, hybrids, vertically integrated firms.[11] The more traditional dichotomy between markets and firms, built on Coase's seminal article, has been broadened and relaxed to include networks and other forms of hybrids.[12] As mentioned above, the factors affecting the choice between different organizational modes have also changed for technological reasons. Knowledge production and distribution have become key dimensions due to the increasing importance of technological innovation.[13] These operate in relation to both inputs and outputs, giving rise to different forms of networks.

As to inputs, networks arise when resources' complementarity is needed. Inputs' complementarity has blurred the line between product design and process implementation. The design of a product or a combination of products, as in construction with the introduction of building information modelling (BIM), is the outcome of participation by many players, including those who build the product: the designer, architect or engineer, the main contractor, the subcontractors. The design is revised and integrated while the construction process takes place, thereby increasing the difficulty of identifying each party's responsibility for the design and its implementation. Networks arise to implement collaborative technologies that make allocation of individual responsibilities costly and difficult, requiring forms of risk sharing.

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[10] For an illustration of how regulatory constraints may positively affect the formation of networks see F. Cafaggi and P. Iamiceli, 'Comparative Analysis', in F. Cafaggi and P. Iamiceli, *Inter-firm Networks in the European Wine Industry*, EUI Law, WP, 2010/19.

[11] See R. Coase, 'The nature of the firm' 4, *Economica* 16 (1937), 386; O. Williamson, 'Transaction cost economics: the governance of contractual relations', *Journal of Law and Economics* (1979), 233–61.

[12] See O. Williamson, above n.11, and *The Mechanisms of Governance*, OUP, 1994, particularly Chapter 4, pp. 93ff.

[13] See K. Arrow, *The Limits of Organisation*, Blackwell, 1974.

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As to output, networks emerge when output is indivisible, for example because the new produced knowledge cannot be incorporated into an intellectual property right (IPR) or the property right can not be subdivided.[14] When this feature occurs, networks are at a competitive advantage over discrete contracting. While propertizable knowledge has always been held compatible with discrete contracting, for a long time a large amount of knowledge that could not be propertized and even tacit knowledge were thought decisive factors in vertical integration and the use of corporate form.[15] More recently, it has been held that contracting for innovation may take place even if knowledge exchanges cannot occur through property rights but have to be secured through contractual means.[16]

The understanding of contractual relations has also evolved over time, focusing more and more on contractual governance.[17] When relational contracts are in place, involving multiple parties with a high degree of interdependence of capabilities and resources, the traditional contractual dichotomy between exchange and organizations loses its explanatory bite and calls for new categories in contract theory.[18] This stream of the literature has been complemented by that on incomplete contracts.[19]

Contractual networks largely fit into the particular category of incomplete contracts where both ex ante design and allocation of rights and ex

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[14] See on output indivisibility and theory of the firm A. Alchian and H. Demsetz, 'Team production theory', 62 *American Economic Review* (1972), 779.

[15] See J. Oxley, 'Appropriability hazard and governance in strategic alliances: a transaction costs approach', 13 Journal of Law Economics and Organization, 387 (1997), 402–06, and more recently in a different perspective M. Blair and E. O'Hara, 'Outsourcing, modularity and the theory of the firm', 2009, Industry studies association, Annual association conference, May 2009, available at www.industrystudies.org. For a wider account J. Nickerson and T. Zenger, 'A knowledge-based theory of the firm: the problem-solving perspective', 15 *Organization Science* (2004), 617–32.

[16] See See K. Arrow, *The Limits of Organisation*, Blackwell, 1974, 31ff., B. Holmstrom and J. Roberts, 'The boundary of the firm revisited', *Journal of Economic Perspectives* 4 (1998), 73, E. Gorga and M. Halberstam, 'Knowledge inputs, legal inputs and firm structure: towards a knowledge-based theory of the theory of the firm', 101 *Northwestern University Law Review* (2007) 1123.

[17] See G. Teubner, '*Coincidentia oppositorum*: Hybrid networks beyond contract and organisation', in M. Amstutz and G. Teubner, *Networks: Legal Issues of Multilateral Cooperation*, Hart, 2009.

[18] See Cafaggi, above n. 5, 495.

[19] See A. Schwartz, 'Incomplete contracts', *The New Plagrave Dictionary of Economics and the Law*, Macmillan, 1998, 277–83; O. Hart and J. Moore, 'Foundations of incomplete contracts', *Review of Economic Studies*, 1999, R. Scott, 'Indefinite agreements', *Columbia Law Review*, 2003.

post adjudication represent a second-best solution to incompleteness.[20] They respond to difficulties concerning observability of performance standards, deploying information technologies fostering cooperation. They require governance devices to monitor and to steer the web of relationships taking place inside the network based on peer monitoring.[21] They increase verifiability and often devise dispute resolution mechanisms that reduce litigation costs. Such governance devices often differ from those deployed by corporate law and contribute to aligning interests inside the network and to responding to exogenous shocks coming from markets' evolution. Often a network contract is better able to complement formal and informal contracting than the corporate law form where higher procedural requirements, especially for listed companies, preclude the use of informal arrangements.[22]

Networks are often juxtaposed with hierarchies on the assumption that decision-making power is distributed symmetrically. This is not necessarily the case. In practice, the decision-making power inside a network can be distributed highly asymmetrically and still be compatible with the network form, where economic interdependence does not translate into legal integration. Thus we observe networks with even and uneven distribution of power. The enterprises belonging to the network are legally independent. Unlike business groups in networks, there is no control by one firm over the others.[23] Legal independence may be related to economic dependence translating into hierarchical networks where the dominant firm dictates terms of cooperation both among the others and between them and the dominant firm. The different contractual power within a network may influence how governance operates and how the entry and exit of individual parties are regulated. Differences in power may be reflected in divergent interests among network participants which require

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[20] See R. Scott and G. Triantis, 'Anticipating litigation, in contract design', *Yale Law Journal* (2006), 814ff.; R. Scott and G. Triantis, *Foundations of Commercial Law*, Foundation Press, 2009.

[21] Often contractual networks set up management or executive committees composed of representatives of each participant to monitor compliance and adjust the objectives according to new circumstances.

[22] See R. Gilson, C. Sabel and R. Scott, 'Braiding: the interaction of formal and informal contracting in theory, practice and doctrine', available at http://papers.ssrn.com/so13/papers.cfm?abstract_id=1535575.

[23] Business groups are distinguished from multibusiness firms: 'Business groups combine strong ownership and weak control over numerous firms contrary to multibusiness firms with their weak owners and strong managers'. See F.M. Fruin, 'Business groups and interfirm networks', in *The Oxford Handbook of Business History*, above n. 1, p. 248.

effective governance design to protect the incentives of weaker parties to enter and their freedom to exit.

Strong asymmetry of contractual power is often reflected in the deployment of bilateral linked contracts, while a relatively more even distribution of contractual and market power is often associated with the use of multilateral contracts. Empirically, the latter model emerges more frequently when parties have similar initial contractual power or want to distribute decision-making power evenly even if outside the network differences among the parties are substantial.[24] However, it is not rare for the use of standard multilateral contract forms to create a network where one enterprise drafts the contract and the others simply adhere to it.[25]

Both horizontal and vertical networks encompass a collective interest but also individual, often diverging, interests. The governance of the network responds differently to the combination between collective and individual conflicting interests. Effective contract design should reflect the ability to promote the collective interest while aligning individual conflicting interests.

## THE DIFFERENCE BETWEEN CLUSTERS AND INDUSTRIAL DISTRICTS

The concept and role of networks of enterprises differ from those of clusters and industrial districts although there are common themes. Industrial districts and clusters have been characterized by territorial concentration, specialization. They have been described as an alternative model to the vertically integrated firms, highlighting some of the differential features.[26]

Their competitive advantages have been identified with superior ability to adapt to changes in markets and technologies.[27] Economies of agglomeration and specialization have characterized these systems and their ability to generate modes of governance capable of internalizing

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[24] The latter can happen for example when a research firm with a high level of knowledge and patent ownership is involved in a joint venture with a producer of goods and services which does not have an internal innovative R&D department.

[25] This is the case with trading platforms, for example, eBay in the field of electronic commerce.

[26] See C. Crouch, P. Le Galés, C. Trigilia and H. Voelzkow, *Local Production Systems in Europe: Rise or Demise*?, OUP, 2001.

[27] See J. Zeitlin, 'Industrial districts and clusters', in G. Jones and J. Zeitlin (eds), *The Oxford Handbook of Business History*, OUP, 2008, p. 219. 'A capacity for collective innovation, adaptation and reconversion is thus the hallmark of successful districts over the longer term', p. 225.

collectively positive externalities. These economies and other competitive factors such as the higher level of trust are not themselves the most important competitive factors. Rather they may constitute the basis for and the driver to an institutional setting composed of different types of organisation aimed at providing services that rationalize these micromarkets and ensure effectiveness of non legal sanctions related to reputation, blaming and shaming. However the recent transformation of districts and local production systems have imposed changes in governance in order to control supply chains ever more geographically dispersed.[28] For the traditional local institutions centred around public-private partnerships, collective private organizations and local financial institutions, there has been the development of supply-chain governance that captures enterprises located geographically outside the local production system.[29] These include electronic platforms and e-governance devices in order to link actors located outside the territorial boundaries of the district.

Industrial districts, in the Marshallian sense, only represent a subset of local production systems, generally characterized by the predominance of local ties even if their strong export identity has always contributed to a global dimension.[30] The difference with other production systems depends on the relationship between core and periphery and whether a qualitative or quantitative criterion is adopted to define agglomeration. With delocalization, the number of enterprises operating locally has significantly decreased. However the core, i.e. the physical place where ideas and processes were developed, has often remained rooted in one geographical area. Only by shifting from a quantitative to a qualitative criterion to identify the district can these ties be considered still as part of a local production system.

The ability to govern competition and cooperation, thereby increasing

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[28] See C. Sabel, 'Diversità non specializzazione: I legami che uniscono il nuovo distretto industriale', in A. Quadro Curzio and M. Fortis (eds), *Complessità e distretti industriali*, Bologna, 2002, pp. 179 ff. Id, 'Districts on the move: note on the Tedis Survey of the industrialization of district firms', presented at Local Governance and production conference in Turin, December 2004.

[29] See J. Zeitlin, 'Industrial districts and clusters', above n. 27, p. 232, who claims that the recent transformations of industrial districts – related to the emergence of medium-sized enterprises as leaders in the district, a higher level of sourcing from outside the district and the entry of MNC – have required governance transformations beyond the traditional intermediate bodies.

[30] See G. Becattini, M. Bellandi and L. De Propris, 'Critical notes and contemporary reflections on industrial districts: an introduction', in G. Becattini, M. Bellandi and L. De Propris (eds), *A Handbook of Industrial Districts*, Edward Elgar, 2009, pp xv ff.

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industrial performance, is clearly an element which can also be referred to the relationship among enterprises within networks. However, both the modes of cooperation and competition differ.

## THE BOUNDARIES BETWEEN CONTRACT AND CORPORATE LAW: THE CHALLENGES POSED BY CONTRACTUAL NETWORKS

The selection of organizational form defines the economic and the legal boundaries of enterprises.[31] While the choice between organizations and contracts operates within a bright line where the boundaries are well defined, networks are generally associated with grey areas where the level of interdependence may be so high that, despite formal legal independence, enterprises may be strongly enmeshed.[32]

Contractual networks challenge the partition between contract and company law because they require governance devices that reflect a higher level of complexity than conventional bilateral contracts without creating a new entity. They capture interdependences among contracts beyond privity and concern the creation of rights and the imposition of liabilities on third parties well beyond the conventional domain of contract law, grounded on the ideal-type of bilateral contracting. They may require financial resources to pursue the common project and to engage with third parties to buy or to sell outputs.[33] The challenge to the conventional divide becomes particularly strong in multiparty contracts. The boundaries between multilateral contracts and organizations are not well defined and the literature on contractual networks focuses primarily on bilateral

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[31] See P. Milgrom and J. Roberts, 'The boundaries of the firm revisited', 12 *Journal of Economic Perspectives*, 73 (1998); M. Blair and R. Thompson, 'What determines the boundary of the firm? An essay on the role of law and legal institutions', Working Paper (2008), L. Zingales, 'Corporate governance', *The New Palgrave Dictionary of Economics and the Law*, Macmillan, 1998, 487 ff.

[32] The move from contract to vertically integrated firms transforms contractual relationships into employment relationships. What in the first instance is a contract between two legal autonomous entities becomes a relationship between two divisions or in the case of a business group, two formally autonomous legal entities both controlled by a third entity. In business groups, the relationship between entities is contractual but these contracts are execution of the will of the controlling party. In a vertically integrated firm, the relationship is defined by employment law and performance is generally designed by the management.

[33] See Geiss, above n. 9 and from a different perspective Teubner, above, n. 17, p. 3 ff.

linked contracts without devoting sufficient attention to multiparty contracts and how they differ from corporate entities.

In the conventional view, contracts are represented as ventures where parties have a common interest in maximizing the surplus from trade but conflicting interests over how to distribute the surplus. Cooperation is considered instrumental in generating the contractual surplus to be divided.[34] The existence of a common goal among the parties is generally associated with the use of organizations and the boundaries between contract and organization cut across the line between competition (contract) and cooperation (organization). Clearly a more sophisticated view of contract recognizes that contractual relationships can encompass both a cooperative and a competitive dimension, but the presence of a common interest is generally considered to be foreign to contract and contract law and defines the domain of company law. An additional element is represented by the 'nature' of knowledge. Contracts are generally deployed when property rights can be ex ante well defined, while organizational models are preferred when knowledge cannot be easily 'propertized' ex ante. For example, one can compare the context where the main contractor owns a patent and asks the subcontractors to manufacture the product accordingly (intellectual property rights are ex ante well defined) with that where the main contractor does not have a patent and wants to co-design the product with subcontractors. The final project will be the outcome of exchanges among them. In the latter case, the conventional view suggests that an organizational model is best suited. These views have analytical appeal because they divide the world of industrial organization into two separate worlds and depending on the level of uncertainty, push for the use of contract or organizations. However, they have little correspondence with reality where contractual networks emerge to implement projects characterized by a high level of uncertainty where parties have to organize complementary knowledge and develop safeguards to prevent leakages towards third parties.[35] Not only are contracts compatible with a high level of ex ante uncertainty but the two models can often complement each

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[34] More recent research suggests that fairness in the allocation of the surplus is somewhat relevant and affects incentives to enter into a contractual relationship and to structure the deal. See E. Fehr and S. Gächter, 'Fairness and retaliation: the economics of reciprocity', 14 *Journal of Economic Perspectives* (2000), 159–81; E. Fehr, U. Fischbacher and S. Gächter, 'Strong reciprocity, human cooperation and the enforcement of social norms', 13 *Nature* (2002), 1–25.

[35] The puzzling question is why parties prefer contractual over organizational networks when they develop common projects deploying complementary knowledge.

other. Contractual networks frequently arise in the area of R&D and are often combined with organizational models. Empirical research shows that often contractual models are first to emerge, then they are 'stabilized' by way of complementary organizational models that may provide additional financial resources and are more effective in dealing with third parties.[36]

As the German and the Italian approaches clarify, contractual networks have a common goal (Netz zweck, scopo comune) to be combined with those of the individual participants.[37] But the existence of a common goal does not inevitably lead to an organizational model. This goal may translate into specific relationships between the network and single members, with a web of duties and rights generally framed within the general clause of loyalty. The duty of loyalty of individual contractual participants towards the network implies covenants not to compete, duties to inform and best efforts clauses, among other things. But contractual networks also present distributional issues concerning risk and profit allocation frequently thought of as typical of the organizational model. They often emerge as a response to a more effective risk allocation system concerning the final product or service where interdependences of performances are high even among non-direct contractual partners. The distinction seems to be a matter of degree: organizational models imply full sharing of inputs, profits and losses; but more importantly, they correlate the former with the latter in different ways from those that can be deployed in contractual networks. The differences become more radical when the relationship with third parties is considered. In organizational models, limited liability is the rule; in contractual networks, unlimited liability is the rule in the form of both individual and joint liability. Parties to the network are considered to be joint debtors or creditors of the third party.

Contractual networks often display a broader set of arrangements to allocate internal liability and differentiate its allocation vis-à-vis third parties. Often parties need to differentiate internal allocation from external allocation because the cheapest cost avoider is not always the best insurer.

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[36] Typically, while in the first stage when the new knowledge has to be produced parties limit themselves to contractual networks, when the new knowledge is produced the implementation of the project is based at a new company. See F. Cafaggi and P. Iamiceli, 'Reti di imprese e modelli di governo interimprenditoriale: analisi comparativae prospettive di approfondimento; in F. Cafaggi and P. Iamiceli (eds), *Reti di imprese tra crescita ed innovazione organizzativa, Riflessioni da una ricerca sul campo* Mulino, 2007, 279–332.

[37] Grundmann criticizes the use of quasi-company theory to explain and regulate contractual networks. See Chapter 5 below.

Therefore the risk of default may be placed unevenly among the partners even if joint and several liability is the rule towards external parties.

## FORMAL AND INFORMAL AGREEMENTS WITHIN CONTRACTUAL NETWORKS

The existence of networks has often been associated with informal relationships, with claims that flexibility to adapt requires informality. This association has been described empirically and even at times theorized, contending that reciprocity and trust may ensure self-enforceability or emphasizing the role of social norms and non-legal institutions.[38] This approach has often limited the emergence of a legal concept of network.[39] Empirical research shows that contractual networks as formalized arrangements exist and play an important role in coordinating activities among firms to induce and preserve incentives to cooperate. Thus a formal concept of contractual networks is not only theoretically possible but also empirically accurate.

In a frame of formalized contractual network that is legally enforceable, the relevant question concerns which combination between formal and informal elements exist. The level of formalization changes significantly in relation to firms' size; contractual networks tend to be highly formalized when strategic alliances among big multinational firms are concluded, while a more balanced combination of formal and informal terms exists in contractual networks composed of small and medium enterprises (SMEs). Within the latter, the level of formal arrangements increases with their internationalization, while a higher degree of informal agreements exists in domestic networks.[40]

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[38] For a very sophisticated historical approach, see A. Greif, *Institutions and the Path to the Modern Economy: Lessons from the Medieval Trade* CUP, 2006. In this volume, see F. Gómez, Chapter 2.

[39] See R. Buxbaum, 'Is "network" a legal concept?', 149 *Journal of Institutional and Theoretical Economics* 4 (1993), 698–705 and in a different perspective Teubner, above, n. 17, pp. 3 ff.

[40] See F. Cafaggi and P. Iamiceli, above n. 10. In empirical research conducted in the years 2008–9 concerning the European wine industry, where representatives of 170 enterprises were interviewed, the level of formal enforceable contracts within networks was relatively high. The concept of formalization goes well beyond the boundary between enforceable and non-enforceable contracts but includes also the use of written contracts, sometimes even standard contracts. What allows for flexibility is the partition between complete and incomplete contracts. Contracts within networks are formalized but incomplete and often the part which is not

Part of the debate concerning the level of informality is better framed within the issue of contractual incompleteness. Contractual networks differ from bilateral contracts because often completion occurs by way of informal means. Experimental economics has showed that at times incompleteness may foster cooperation and reciprocity, while formalization may crowd them out.[41] While the contracts within the network have a degree of definiteness compatible with the requirements for a binding contract, the modes of completion for each individual contract, given their independence, may deploy informal mechanisms. This is the result of two main factors:

(1) the need for flexibility requires coordination that is often in conflict with legal formalism;
(2) current contract law makes legal coordination among linked contracts quite complex.

For example, whether a contract should be considered an output contract or not might be decided according to external factors. If information is not available ex ante, parties may conclude an incomplete contract and leave open the definition of quantity.

## THE AIMS AND THE STRUCTURE OF THE BOOK

The book is structured in three parts: in the first, the place and scope of contractual networks is analysed in the light of contract law and theory. Within this analysis, the implications from economics are examined through the lens of the relationship between firms and credit institutions. Part II looks at different European legal systems in order to compare how they provide the legal framework for the emergence and stabilization of networks. The contributions confirm that rather different approaches are taken and more comparative institutional analysis is needed from the perspective of the creation of a European regime. Part III is devoted to the role of private international law and the European transnational networks.

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complete plays a strategic role in the relationship. Furthermore contracts between wine producers and distributors are more formalized than those between grape-growers and wine-makers.

[41] See M. Brown, A. Falk and E. Fehr, 'Contractual incompleteness and the nature of market interactions', CEPR Working Paper 3272 (2002), available at http://www.cepr.org/ and for the implications of crowding out, Gilson et al., above n. 22, pp. 1 ff.

Fernando Gómez's contribution analyses the place of contractual network in contract theory. The high level of transaction costs, high physical and human asset specificity, do not necessarily lead to vertical integration. Gómez underlines that contractual networks emerge to induce and sustain cooperation among parties. Cooperation may be induced by reducing opportunism or increasing the benefits of remaining in the relationship if parties can earn quasi-rents. Relation-specific investments may become the engine of cooperation if the contractual design is well engineered. Furthermore, increasing switching costs in open-ended relationships can promote cooperative behaviour. Cooperation needs a strong governance framework to face several problems mainly associated with contract incompleteness: 'multidimensionality of behaviour, uncertainty surrounding actions and outcomes, long-term character, influence of future contingencies, investments by the parties that can enhance, maybe very significantly, the value of the interaction, but with a high degree of specificity, and thus, are subject to the risk of extortionary negotiation or hold-up'. He points out, following game theory and in particular the trust game, that duration, the long-term nature of the relationships, is not itself sufficient to warrant cooperation. According to Gomez: 'If the game is played repeatedly a finite number of times, the lack of incentives to cooperate, even if it is in the best long-term interest of both contracting parties, is as unsustainable as in a one-shot version of the interaction. . . if the relationship is open-ended on both sides, cooperatives outcomes are likely to arise'. Gomez argues that bilateral termination rights may provide incentives to cooperate. While he recognizes that termination rights can be abused and misused, he contends that mandatory prohibition of termination rights may reduce, not increase, incentives to cooperate. The solution is to grant termination rights and carefully police their exercise.

In their chapter, Scalera and Zazzaro aim to provide a selective review of the literature on inter-firm networks and access to finance, giving an account of both the main results to date and the issues that are still unresolved. In particular, two main questions are addressed: whether finance is a motivation driving the formation of inter-firm networks and which forms they might take. Subsequently they explore whether inter-firm networking increases the availability of financial resources for network members, and if so, through which channels.

In Chapter 4, Cafaggi describes the main models of contractual networks: network of contracts (composed of several interdependent bilateral contracts) and networks of enterprises (coinciding with multilateral contracts). He suggests that these two models represent ideal-types within which several variations have developed in practice. He first describes the structural features of the two models and then compares them on the

basis of previous empirical research. The comparison suggests that the relevant variables influencing choice comprise six dimensions: uncertainty and contract incompleteness, interdependence, ownership, competition, decision-making power and governance. Each of these factors influences the choice between a network involving a bilateral contract or a multilateral contract.

The second part of the book shows how different the approaches in Germany, France and England are. In none of these legal systems are networks, as defined by the economic and sociological literature, regulated. Italy was the first country to introduce specific legislation in 2009/2010 concerning contractual networks.[42] The Italian legislation refers only to contractual network, leaving out organizational networks, with a regime that designs contractual governance distinguishing between network design and management.

The German system described by Stefan Grundmann shows a wide array of instruments to address linked contracts as the expression of a network. He distinguishes between primary and secondary claims and proposes to look first at duties and only afterwards at liabilities in order to identify the network Within the duties, a distinction should be made between main performance, ancillary duties and protective duties. A network does not arise every time there is liability towards third parties outside the contract. Unlike other systems which have used extensively tort law to address liability for breach of contract towards third parties, the narrower scope of German tort law has stimulated the creative use of contract law to capture interdependencies. Grundmann examines very different types of networks ranging from the production and distribution chain to the interaction between prospectus issuers, advisers and certifiers and investors. By, indirectly, emphasizing the difference with the French model, he clarifies that the precondition for a claimant to go after a third party is the inability to bring a claim against the contractual partner. Otherwise, Grundmann concludes, third party claims should be ruled out.

The French system described by Carole Aubert de Vincelles clearly distinguishes between *chaines* and *groupes de contrats*. In her chapter she focuses on *contrats liés*, defines when they exist and what are their effects. After considering conditions and ancillary contracts, she analyses the concept of *indivisibilité* (inseverability), related to obligations but also applied to *ensemble contractuel* and that of interdependence related to contracts. She underlines that the concept of interdependence has academic origins but is more promising than that of *indivisibilité*, especially if

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42 See F. Cafaggi (ed.), *Il contratto di rete: Commentario*, Il Mulino, 2009.

the latter is related to parties' intent. She then examines the case law and the distinction between divisible and indivisible *ensembles contractuels*. Aubert de Vincelles analyses the effects of the recognition of contractual network and emphasizes the consequences for interpretation and termination. Each contract must be interpreted in the light of the whole network by taking into account contractual interdependence. She then clarifies the extent to which contractual liability towards third parties is available and how that contributes to the identification of contractual links. She concludes with a plea for flexibility. If a European framework were to be devised, it should be flexible and allow multiple solutions.

The distinctions between the German and the French systems about liability among non-contracting parties are numerous. They are not only related to the rules applied to linked contracts but also to the use of *action directe*, allowed in France and prohibited, to a large extent, in Germany, Italy, England and other European legal systems.[43] These distinctions affect not only the shape of the network but also its existence. By recognizing direct liabilities, systems like the French strengthen interdependences and force reallocation of costs among parties following *actions directes*. However, in Germany, contracts with effects on third party and third party beneficiary contracts may to some extent play a similar function. Thus, in terms of functional outcomes, the differences are not as stark as they may at first sight appear.

The English system analysed by Simon Whittaker takes a different approach. According to Whittaker, English contract law does not recognize the concept of contractual network because it endorses a quite strict notion of privity even after the legislative reform of 1999. But more importantly, the English law of contract, based on parties' freedom, rejects the possibility of imposing effects of contracts concluded by other parties. Consent is the guiding principle in Business to Business contracts. Simon Whittaker distinguishes between two different sets of instruments that parties can use in English law: constructing a contractual relationship or use of the contract for the benefit of third parties. Four different techniques are described within the first set: assignment of rights, duty of care deed, acting on behalf of the harmed third party, agency. The principle of freedom of contract constrains even the application of tort law for recovery of economic losses suffered by third parties as a consequence of

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[43] The use of *action directe* in France is limited to transactions which transfer ownership. When no ownership is transferred then extracontractual liability is the only instrument for claiming damages arising out of a breach of contract where the victim is a third party. See on this C. Aubert de Vincelles, Chapter 6 in this volume.

a breach of contract. Whittaker highlights the tension between the need to protect third parties from the consequences of harmful breaches and that of preserving freedom of contract by exercising the power to define the effects of a contractual undertaking and its breach. The possibility to seek recovery for breach of contract along the chain defines the boundaries of tort law. If C suffers from a breach committed by A against B and has an action against B, then she should not be given an action in tort directly against A. The duty of care imposed on the breaching party is limited by the rule denying recovery for pure economic losses.

A comparative analysis of the three systems shows that they accord a different role to parties' consent in defining contractual interdependence and its effects. The different domain of contract law designs the perimeter of extracontractual liability for breaches related to interdependent contracts.

The English system gives parties' consent the most prominent role.[44] In the absence of specific indications provided by the parties, bilateral contracts are held to be independent limiting judicial intervention. This approach has expanded the role of tort law to capture the effects of breach of contract on third parties. The French system, on the other hand, provides for a default rule that regulates the link even in the absence of specific clauses but not against the parties' consent, unless parties' intent to fragment the relationship is fraudulent or would artificially fragment a unitary economic activity.[45] The German system seems to take a middle ground position, recognizing a default rule that regulates the link absent explicit indications by the parties but to a more limited extent than the French system.[46] According to Grundmann, the default operates differently in a network of consumer contracts and a network of business contracts. Parties' intention is more relevant in the latter, whereas consumer protection requires a different approach in the area of linked contracts between firms and consumers.

How do these differences and others concerning national contract laws in Europe affect the possibility of creating transeuropean contractual networks? The issue is addressed in the contribution by Cafaggi and Clavel in the last part of the book. They examine the Rome I Regulation and analyse the difficulties of using private international law to define a governance regime. Parties enjoy freedom within the limits of national public order regimes. Problems arise when parties have not defined applicable

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44 See S. Whittaker, Chapter 7 in this volume.
45 See C. Aubert de Vincelles, Chapter 6 in this volume.
46 See S. Grundmann, Chapter 5 in this volume.

laws or have not sufficiently coordinated in the case of bilateral contract networks. When the contractual network is composed of bilateral contracts whose applicable law differs, different notions of interdependence may create tension and destabilize the network. In multilateral contracts, coordination is less of a problem but default rules are missing and the current criteria are not satisfactory. The authors advocate a wider use of dépeçage and a shift from the territorial approach that still characterizes default rules to a functional approach where judges could refer to the European network industrial policy when interpreting choice of law rules. This approach, combined with the draft of Guidelines concerning general principles, could provide a better legal framework to increase and empower transeuropean contractual networks.

The book complements a comparative and European approach on networks, suggesting that economic factors will increasingly push towards inter-firm collaboration across Europe and that the legal landscape, currently highly differentiated, should be redesigned in order to provide effective instruments for industrial policies.