**APPENDIX A**

**DATABASE OF EMPIRICAL STUDIES CONCERNING CONTRACTUAL PRACTICES IN THE MARKET ECONOMY**

**Summary:**

**55 empirical studies on contracting practices, combining different approaches and methodologies: 12 studies collecting either interviews, surveys and questionnaires; 18 studies analyzing contractual instruments; 6 historical studies; and 19 broader case studies, combining different methodologies simultaneously (such as collection of documents, interviews, use of questionnaires, observations, etc).**

**Table 1 – Summary of database of empirical articles on contracting practices**

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| --- | --- | --- | --- | --- |
|  | **Interviews, surveys, questionnaires** | **Contractual instruments** | **Broader case studies (combining different methodologies)** | **Historical studies** |
| **Articles collected** | **12** | **18** | **19** | **6** |
| **n =** | **671** | **25.430** | **736** | **6** |
|  |  |  |  | **N = 26.847** |

**List of empirical studies**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Citation | Abstract | Description of cases | Level of sophistication of the market economy –High (H), Mid (M), Low (L) | n |
| **1**  § | Antara Haldar and Joseph E. Stiglitz, “Group Lending, Joint Liability, and Social Capital,” Politics & Society 44, no. 4 (2016): 459–97. | In the context of microfinance, Haldar and Stiglitz found exceptionally high levels of compliance have been recorded without resort to formal enforcement, but backed on a highly context-specific system based on peer monitoring and strong social bonds. | Comparative approach, looking into case of microfinance in the context of India and Bangladesh. | L | 1 |
| **2 to**  **4**  ‡ | Avner Greif, “Reputation and Coalitions in Medieval Trade: Evidence on the Maghribi Traders,” The Journal of Economic History 49, no. 4 (1989): 857–82.  Avner Greif, “Contract Enforceability and Economic Institutions in Early Trade: The Maghribi Traders’ Coalition,” The American Economic Review 83, no. 3 (1993): 525–48.  Avner Greif, “The Maghribi Traders: A Reappraisal?,” The Economic History Review 65, no. 2 (2012): 445–69. | Avner Greif has studied historical records concerning commercial relationships between Maghribi traders in the Mediterranean in the 11th century and their agents dispersed throughout the world. He claims that contracts concluded were incomplete and no legal sanctions were employed to counteract potential opportunism in these transactions. Instead, the Maghribi developed a private order through trade coalitions. Through these institutions, information about agents’ conduct would flow among the Maghribi and collective punishment would be secured, both through the threat of not being hired in the future and reputational damage that could undermine the agents’ activities overall. In the absence of contractual provisions, the merchant law (customary law) would apply to these relationships. In the absence of contractual provisions, the merchant law (customary law) would apply to these relationships. | Historical analysis. | M | 1 |
| **5**  † | [Blair, Margaret M.](http://heinonline.org/HOL/AuthorProfile?action=edit&search_name=Blair%2C%20Margaret%20M.&collection=journals); [O'Hara O'Connor, Erin](http://heinonline.org/HOL/AuthorProfile?action=edit&search_name=O%27Hara%20O%27Connor%2C%20Erin&collection=journals); [Kirchhoefer, Gregg](http://heinonline.org/HOL/AuthorProfile?action=edit&search_name=Kirchhoefer%2C%20Gregg&collection=journals" \t "_blank); [Outsourcing, Modularity, and the Theory of the Firm [article]](http://heinonline.org/HOL/Page?handle=hein.journals/byulr2011&div=21&start_page=263&collection=journals&set_as_cursor=27&men_tab=srchresults), *Brigham Young University Law Review*, Vol. 2011, Issue 2 (2011), pp. 263-314 | The article reviews a number of outsourcing contracts for evidence that contract techniques are used to help modularize the relationship between the firm and its service provider. Consistent with what modularity theory might predict, some contract terms seem to work to thin the interactions between the firm and its service provider, and this thinning serves to make contracting for otherwise intrafirm services more feasible. Other contract terms serve to help the parties manage the fact that inevitably their relationship will be thick with interactions. | 7 outsourcing contracts. Five of these were for information technology services (including call centers, data management, and human resources management services), one was for a software writing project, and one was for manufacturing services. These contracts were all drafted and/or negotiated by Kirkland & Ellis on behalf of the parties in a period of nine years preceding the publication of the article. | M | 7 |
| **6**  § | Britt-Mari Blegvad, “Commercial Relations, Contract, and Litigation in Denmark: A Discussion of Macaulay’s Theories,” Law & Society Review 24, no. 2 (1990): 397–411. | A pilot-study conducted in Denmark examined the contracting practices of 3 firms by Blegvad. The results indicated that, routinely, in cases of discrete transactions, a more traditional contract law approach is followed, with brief contracts with clear obligations – even though litigation is rare in practice. However, for long-term relationships, more robust contract governance is established and contingencies are solved mostly informally, with formal enforcement remaining as an unlikely outcome for the case of fall-out between the parties | Case study involving contracting practices of 3 firms in Denmark involved, respectively, in machinery manufacturing, computer manufacturing and in the graphics industry. | M | 3 |
| **7**  § | Cullen et al, *A critique of contractual relationships in the aerospace industry: collaboration v. conflict*, 1 International Journal of Law in Context 397, 398-399 (2005). | Aerospace industry in the UK – report about relationships in both the civil and military areas, where performances between different companies have to be strongly coordinated for successful performance, describing the use of special forms of agreements. | 8 case studies with aerospace companies. The studies included semi-structured questionnaires to form a framework for a series of interviews with commercial, procurement, legal and technical managers in the respondent organisations. | H | 8 |
| **8**  † | DG Smith, “The Exit Structure of Strategic Alliances Symposium: Uncorporation: A New Age,” University of Illinois Law Review, no. 1 (2005): 303–18. | Examines the creation and functions of steering committees (or contractual boards) in strategic alliances. | 2 strategic alliance agreements in the biotech industry in the US. | H | 2 |
| **9**  **\*** | E. Lorenz, “Trust, Contract and Economic Cooperation,” Cambridge Journal of Economics 23, no. 3 (May 1, 1999): 301–15. | In a study set in Lyon, France of 10 machine-building companies (1985-1986) with regard to their relationships with suppliers, Lorenz found out that the contract was unlikely to be enforced and that trust was an important element in allowing for the cooperation to succeed. The relational element, however, was facilitated by governance mechanisms and by the design of the agreement. | Interviews with management representatives of 10 machine-building companies. | M | 10 |
| **10**  § | Elinor Ostrom, Governing the Commons: The Evolution of Institutions for Collective Action (Cambridge: Cambridge University Press, 1990). | This book contains an extensive database on the management of common pool resources assembled by Ostrom. In these situations, uncertainty stems from the inherent variability in the relationship. In these cases involving scarcity of resources, the mechanisms created by the parties often cannot establish, *ex ante*, for instance, the quantity of water that a certain member of the common pool can withdraw in *Huerta* irrigation institutions in Spain; or how much fish a fisherman can extract from a certain spot without causing depletion of resources in Alanya, Turkey; or how many cows a farmer from Torbel, Switzerland can send to Swiss meadows during the winter without causing overgrazing. Rather, what is observed is the creation of certain procedures, adapted to local circumstances, developed through the course of a long period of trial and error-based experimentation, allowing for some flexibility in the determination of the adequate level of use of resources. | Analysis of 18 different case studies of common pool resources management, in different geographic locations. | L | 18 |
| **11**  § | Emily Weitzenboeck, A Legal Framework for Emerging Business Models (2012) | The book analyses how dynamic networks are organized and set up through, very often, collaborative contracts and how the behaviour of their member firms is regulated. Good faith and fair dealing as a behavioural criterion in contractual and partnership relations, is an important theme of this work. The background and preconditions for the emergence and growth of such business forms is also investigated. | The author combines theoretical framework with the examination of 14 different case studies concerning business networks. | H/M | 14 |
| **12**  § | F. Cafaggi & P. Iamiceli, *Interfirm Networks in the European Wine Industry*, 2010-19 EUI Working Papers 146-7 (2010) | Contracting practices in Italian wine industry, reporting the existence of different governance mechanisms. | It analyses the main models of inter-firm networks, both contractual and organisational, as emerging in the wine market in 7 regions of five European countries: Loire (France), Trentino province (north-east Italy), Verona province (north-east Italy), Enna and Ragusa provinces (east Sicily, Italy), Douro and Porto regions (Portugal), Valencia (Spain), and selected regions of Hungary. The 7 case studies are presented both individually and comparatively. | M | 7 |
| **13**  † | G Geis, “An Empirical Examination of Business Outsourcing Transactions,” Virginia Law Review 96, no. 2 (September 11, 2009): 241–99. | Empirical study on outsourcing agreements in the space between markets and firms: firms independent but with contracts providing certain special rights or strong monitoring. | Sample database of 60 outsourcing contracts spanning the fourteen-year period from 1994 to 2007. The transactions encompass a variety of geographies, industries, and business functions. These contracts were identified through a systematic screening of approximately 1260 transactions in OneCle's "Services Agreements" database. | M | 60 |
| **14**  **\*** | G Hadfield and Iva Bozovic, “Scaffolding: Using Formal Contracts to Support Informal Relations in Support of Innovation,” Wisconsin Law Review 5 (2016). | Hadfield & Bozovic published an empirical study of 29 inter-firm business relations in California, US. In the case of commercial contracts in relatively less innovative activities, which involved 12 of the companies in the sample, their results mirrored Macauley’s predictions: formal contracts have little relevance for the resolution of arising disputes between long-term contractual partners, and informal relational mechanisms are mainly relied on to solve these disputes. In relation to the other 17 companies involving innovative relationships, the role of the contract and of governance instruments was found to be crucial for management of the relationship. | Semi-structured interviews with representatives of 29 business firms in California, US. | H/M | 29 |
| **15**  † | George Baker, Robert Gibbons & Kevin Murphy, Strategic Alliances: Bridges Between "Islands of Conscious Power," (2004) (unpublished manuscript), available at <http://web.mit.edu/rgibbons/www/Strategic%20Alliances.pdf> | Analyzes types of governance structures developed in inter-firm strategic alliances, particularly looking into the biotech sector. | The evidence comes from data collected by Recombinant Capital (specialists on biotechnology alliances) on nearly 12,500 publicly disclosed contracts between pharmaceutical and biotechnology firms from 1973 to 2001. | H | 12,500 |
| **16**  § | Gulati, Ranjay & Martin Gargiulo. 1999. Where Do Interorganizational Networks Come From?. 104 Am. J. Sociol. 1439-1493. | This research claims that the probability of a new alliance between specific organizations increases with their interdependence and also with their prior mutual alliances, common third parties, and joint centrality in the alliance network. The differentiation of the emerging network structure, however, mitigates the effect of interdependence and enhances the effect of joint centrality on new alliance formation. | Sample of American, European, and Japanese business organizations in three different industries over a 20-year period. We collected data on a sample of 166 organizations in new materials, industrial automation, and automotive products. We selected a panel of 50–60 of the largest publicly traded organizations within each sector, estimating an organization’s size from its sales in that sector as reported in various industry sources. The quantitative data collection and the empirical analysis for this study were preceded by extensive interviews with managers involved in alliance decisions at a variety of organizations. We conducted exploratory, open-ended field interviews with 153 managers actively involved in alliance decisions in 11 large multinational corporations. | H | 153 |
| **17**  **\*** | H Beale and T Dugdale, “Contracts between Businessmen: Planning and the Use of Contractual Remedies,” British Journal of Law and Society 2, no. 1 (1975): 46. | An empirical study assessing 19 engineering manufacturers, mostly in Bristol, England, by Beale & Dugdale presented results widely supporting Macaulay’s argument that, in long-term inter-firm relationships, parties mostly solve their conflicts relationally, without relying on contract planning to solve potential contingencies. | 33 interviews with representatives of 19 engineering manufacturers, mostly in Bristol, England. | M | 33 |
| **18**  § | H. Laurence Ross and Neil O. Littlefield, “Complaint as a Problem-Solving Mechanism,” Law & Society Review 12, no. **20** | For instance, Ross & Littlefield examined customer complaints against a major mass retailer in Denver, Colorado, US (one of the largest sellers of TV sets and home appliances in the area), finding that the customers usually received concessions more generous than legally required. | This study centers on complaint handling at "Western Television and Appliance Company," one of the major distributors of television sets and appliances in a Denver metropolitan area. It combines several interviews with management officers, observation studies, review of documents concerning complaints, and a survey with Western’s customers (a pretest of 102 cases was followed by a main survey of 398, conducted by a contracting market research service). | L | 500 |
| **19**  § | Hernando De Soto, The Other Path : The Invisible Revolution in the Third World (London: Tauris, 1989). | As De Soto, ironically a champion of formalization, reports extra-legal systems are created to structure the housing of poor communities, developed in marginal neighbourhoods in Peru, in the shadow of the legal system. Acquisition contracts and informal associations of different kinds are created to organize the illegal occupation of lands that were invaded or acquired from parties about to be expropriated. The same prevails in relation to transport and trade, where complex activities, outside the law, are organized through different mechanisms involving the collaboration and joint participation of the different parties involved. | Case study concerning extra-legal systems of housing, transport and trade in Peru, based on a diverse database. | L | 3 |
| **20**  § | Huayao Zhang, Jing Wen, and Junjie Wu, “Contracting for Innovation: The Difference in a Case with Fast-Changing Industrial Background in China,” Journal of Global Information Technology Management 21, no. 1 (2018): 20–21. | In China, one case study was conducted on the strategic alliance between companies in the smartphone industry. The findings in this instance generally supported braiding theory, but proposed a few differences in the context of an emerging economy. The case study claimed that mutual trust was a crucial condition for contracting for innovation to flourish; without it, traditional formal contracts would be concluded, instead of braided agreements. The study further rejected the idea that the parties had an informal agreement to constrain opportunistic renegotiations in this setting. Rather, they found the agreement contained flexible exit rules and iterative informal contracting that would provide stability for the transaction in this uncertain setting. | Case study including document collection, a focus group and different interviews with manager representatives of one Chinese company undertaking strategic alliances. | H | 1 |
| **21**  § | Inter-American Development Bank – Integration and Trade Sector, IDB-Working Paper Series IDB-WP-370, *Accessing the Global Value Chain in a Changing Institutional Environment* *– Comparing Aeronautics and Coffee* 52, 60-1 (2012) | Analyzes case studies in Brazil – in airspace and coffee industry – regarding contractual relationships in the context of global value chains to produce innovative output. | Two major case studies concerning the aircraft and the coffee industry, involving analysis of several documents and with 19 interviews undertaken (7 regarding the aircraft industry, 12 in the coffee sector). | H | 19 |
| **22**  † | J. Harold Mulherin, “Complexity in Long-Term Contracts: An Analysis of Natural Gas Contractual Provisions,” Journal of Law, Economics, & Organization 2, no. 1 (1986): 105-17. | Complex quantity and price provisions are also found by Mulherin in a large sample of long-term contracts in the coal, geothermal, uranium and natural gas industries, from the 1940’s and 1950’s. | Based on a large database of natural gas contracts.  Exhibit 2-LC of Federal Commission Docket G-9277 forms the data base for the empirical tests of this paper. The contracts in Exhibit 2-LC span the period 1938-54. Table 1 of Exhibit 2-LC contains information from natural gas contracts including the following: seller and purchaser; county and state in which gas is produced; type of gas and type of contract; delivery point; and contract length and price. There are 6,397 observations in table 1. Of these, 2,579 refer to gas transportation, direct sales, processing, or casinghead gas agreements, or they had missing data. To allow the concentration on producer sales to pipelines, these 2,579 observations were deleted from the data used in this paper. The remaining 3,818 observations in table 1 were used to test the gathering line hypothesis in section 2.1. Table 3 of Exhibit 2-LC contains information from individual contracts including the seller and purchaser and the presence or absence of a mostfavored-nation clause. There are a total of 4,266 observations in table 3. Due to missing data, not all of the observations in table 3 could be matched with those in table 1. The merging process produced 2,234 observations that could be used to perform the regression in section 2.3. Table 3 also contains 632 observations providing information on the ratio of the daily take to reserves. All of these observations could be used to enable the testing of the transaction cost hypothesis in section 2.2 and the bankruptcy cost hypothesis in section 3.2. | M | 1 |
| **23**  **\*** | James J White, “Contract Law in Modern Commercial Transactions, an Artifact of Twentieth Century Business Life?,” Washburn Law Journal 22 (1982). | In the context of the US, an empirical assessment of 10 chemical and pharmaceutical companies’ behavior during shortage periods (in 1974 and 1975), concluded that contract law did not influence how they allocated supply during shortages. According to White, these allocations were undertaken informally between the firms. | 30 interviews concerning 10 chemical and pharmaceutical companies’ in the US. | M | 30 |
| **24**  § | Jeffrey Dyer, How Chrysler Created an American Keiretsu, 74 Harvard Business Review 46 (1996) | Practices between leading automotive companies and its independent suppliers of strong cooperation (quasi-integration), with exchange of information and common teams of employees. | Case study concerning Chrysler’s cooperation with its independent suppliers. | H | 1 |
| **25**  **\*** | John McMillan and Christopher Woodruff, “Interfirm Relationships and Informal Credit in Vietnam,” The Quarterly Journal of Economics 114, no. 4 (1999): 1285–1320. | In a survey conducted in Vietnam between 1995-1997, 259 non-state local firms provided information on their contracting practices. These were all manufacturing companies, from different industries (ranging from footwear, construction, metal products, food, among others). The study concluded that relational contracting prevailed in the inter-firm relationships, especially in the absence of a formal contract law and considering the lack of alternative suppliers at that time in Vietnam. According to McMillan & Woodruff, when the agreements involved long-term partners, companies would be more likely to extend credit to these customers | Surveys of 259 nonstate firms in Vietnam (in Hanoi in 1995-1996 and in Ho Chi Minh City in 1997). | M | 259 |
| **26**  **\*** | Jonathan Barnett, “Hollywood Deals: Soft Contracts for Hard Markets,” Duke Law Journal 64, no. 4 (2015): 609–10. | “Braided” contractual practices have also been noted in the Hollywood film industry, particularly in agreement between studios and other production entities and high-value talent, the movie stars. This is a setting involving high uncertainty, where the participation of the movie star, the potential of acquiring the required finance, the chances of success of the movie are generating a constant uncertainty regarding the parties commitment to the project. In this context, evidence has indicated that parties often tread an intermediate path between formal and informal contracting. They rather adopt a form of ‘soft’ contracting, where they base their relationship upon both some formal elements (memoranda, draft contracts, e-mails), which may be legally enforceable in certain conditions, but not always, and combine them with the reputational incentives that arise in the context of the movie industry. | Empirical evidence collected from litigation records, trade –press coverage and 8 interviews with counsel providing advice for the involved actors. | H | 8 |
| **27**  § | Kaivan Munshi, “Nonmarket Institutions,” in Understanding Poverty, 2006. | Examines producers’ cooperatives or schemes of rotating savings, organized through non-market institutions, backed by social ties, and successful without the need for formal enforcement | - | L | 1 |
| **28**  † | Keith J. Crocker & Scott E. Masten, *Pretia ex Machina - Prices and Process in Long-Term Contracts*, 34 J.L. & Econ. 69–100 (1991) | In this article, the processes by which parties adjust prices in long-term contracts from this more relational view of contracting are examined. That contracts often contain provisions for the periodic adjustment of prices is not all that surprising. Both relative prices and the general price level can change substantially over the extended time periods covered by many contracts, making original prices inappropriate to future conditions. What is possibly more surprising is the variety of processes that contracting parties have devised to effect such adjustments. | 234 contracts governing onshore gas sales in the United States. | M | 234 |
| **29**  **\*** | Kenneth Koford and Jeffrey B. Miller, “Contract Enforcement in the Early Transition of an Unstable Economy,” Economic Systems 30, no. 1 (March 1, 2006): 1–23. | 36 Bulgarian companies in the food industry were interviewed in 1994, shortly after the country transitioned to a market economy. At this stage, where resort to courts and the reliability of contract law was still uncertain, Koford & Miller argued that companies relied on relational incentives to assure business, mostly contracting with partners with whom they had established relationships. | Interviews with 36 Bulgarian companies in the food industry | M | 36 |
| **30**  § | L Bernstein, “Beyond Relational Contracts: Social Capital and Network Governance in Procurement Contracts,” Journal of Legal Analysis 7, no. 2 (Winter 2015): 561–621. | A slightly different approach on the structuring of collaborative innovation between multiple parties is suggested in the context of procurement contracts in the US. In relationships between different OEMs (Original Equipment Manufacturer – a company that creates a subsystem to be incorporated in another company’s final product) and its suppliers, it is argued, the contracts are very vague and meant not to be enforced, but to create a relational framework inducing cooperation. Some of the leading companies establishing this framework, analysed in the case study by Bernstein, are John Deere, Caterpillar, Navistar and Harley. | Analysis of selected contracts concluded mainly between 4 large OEM’s and their suppliers and draws on interviews evidence collected from secondary source from a study of OEM–supplier relationships in the upper US mid-west, as well as empirical studies of procurement contracts and strategic alliances, to explore how contracts evolve into highly relational contracts. | H | 1 |
| **31**  § | L Bernstein, “Merchant Law in a Merchant Court: Rethinking the Code’s Search for Immanent Business Norms,” University of Pennsylvania Law Review 144, no. 5 (May 1, 1996): 1765–1821. | Bernstein undertook a case study of the National Grain and Feed Association, demonstrating how a private arbitration court is established to resolve disputes in this field. The enforcement of decisions is mostly voluntary, propelled by relational considerations. | Case study regarding transactions undertaken in the context of the National Grain and Feed Association, relying on a series of interviews, review of documents and on disputes solved by the Board of the NGFA. | M | 1 |
| **32**  § | L Bernstein, “Opting out of the Legal System: Extralegal Contractual Relations in the Diamond Industry,” The Journal of Legal Studies 21, no. 1 (1992): 115–57. | In the area of cotton, Bernstein analyzed the different bodies of law created by different industry associations in the US (American Cotton Shippers Association and the American Textile Manufacturers Institute), to which most of the regional shipping associations and regional exchanges in the US are members. A condition of membership is to submit disputes under this legal framework to a joint arbitral tribunal created by the aforementioned associations. | Case study concerning the private order created in the diamond industry, involving analysis of a series of documents and interview. | M | 1 |
| **33**  § | L Bernstein, “Private Commercial Law in the Cotton Industry: Creating Cooperation Through Rules, Norms, and Institutions,” Michigan Law Review 99 (2001): 1762. | Bernstein’s seminal articles describe private orderings in the context of a wide range of industries. In the diamond industry, she analyzed the functioning of the New York Diamond Dealers Club, comprising 2.000 members with different roles in the industry (manufacturers, wholesalers, brokers, sight dealers). | Case study concerning contractual relationships in the cotton industry, involving analysis of series of documents and series of interviews. | M | 1 |
| **34**  ‡ | Lisa Bernstein, *Contract Governance in Small-World Networks: The Case of the Maghribi Traders*, 113 Nw. U. L. Rev. 1009 (2019). | Drawing on a case study of over 200 Maghribi merchant letters, it develops a network governance-based account of the way that private ordering might have supported exchange among the Maghribi traders with little or no reliance on the public legal system. | Historical document-based analysis. | M | 1 |
| **35**  † | M Jennejohn, “Contract Adjudication in a Collaborative Economy,” Virginia Law & Business Review 5, no. 2 (2010) | Analyzes contracts for innovation, demonstrating that in most cases conflicts are solved internally or referred to arbitration. | A sample analysis of over 8,000 collaboration agreements from the SEC's Edgar database indicating the use of arbitration clauses has held steady in this type of contracts in the US from 1994 to 2005. | H | 8,000 |
| **36**  † | M Jennejohn, “The Private Order of Innovation Networks,” Stanford Law Review 68 (2016): 281. | A more recent survey of a group of 146 “alliance-contracts” to innovate, from a wide range of industries (life science, semiconductor, software and chemical industries) by Jennejohn identified recurrent patterns and sought to explain the reasons for variations. The access to these forms of contracts in the United States is facilitated as several of them are publicly available through the US Securities Exchange Commission (hereinafter, “SEC”). Jennejohn endorses some of the core claims of braiding theory, defending the finding that formal and informal complement each other in innovative transactions. Nonetheless, he indicates gaps and limitations in the theory, intending to develop it rather than reject it. His main assertion is that braiding theory focuses excessively on opportunism between the partners as a cause for the design of contract governance, neglecting other hazards in the collaborative context, which are important to understand the variety in contractual design. Based on his empirical assessment, he claims that a better explanation requires a consideration of a wider number of factors other than opportunism, proposing a theory of ‘multi-valent contracting’. According to him, the main factors to be added are spillovers and entropy, elements typical of collaborative relationships. Spillovers refer to the difficulty of defining ex antethe value of assets (especially intellectual property (IP) rights) that may emerge as an outcome of the contractual collaboration. The parties need to spend resources on establishing the concept of these assets and on policing their boundaries. If a new technological process has been developed in a rapidly developing field, such as the software industry or the semiconductor industry, it becomes necessary to spend resources on identifying that specific technology’s value, labelling it, and policing its use, lest it may be traded deceitfully by one of the partners in the collaborative venture. The other relevant factor is entropy, i.e. the costs to ‘synchronize efforts and learning processes among team members’. In complex projects, the parties must spend resources on communicating adequately and effectively to achieve a functional final product. | Analysis of 146 “alliance-contracts” to innovate, from a wide range of industries (life science, semiconductor, software and chemical industries). | H | 146 |
| **37**  § | M Klausner, “Governance Mechanism in Long-Term Contract,” in Contract Governance: Dimensions in Law and Interdisciplinary Research, ed. S Grundmann, F Möslein, and K Riesenhuber (Oxford: Oxford University Press, 2015), 231–32. | Klausner discusses two case studies on strategic alliances examining the governance mechanisms employed, namely, structural financial payments, limitations of competition, and procedures for exchange of information, coordination and decision-making. | 2 case studies, one concerning concerning the long-term supply of testers for semiconductors, the other concerning a biotech collaboration. | H | 2 |
| **38**  † | Matthew Jennejohn, *Collaboration, Innovation and Contract Design*, 14 Stanford Journal of Law, Business & Finance 83, 94 et seq (2008). | Re-conceptualizes contracting as an effort, inter alia, to establish a pragmatic learning process between collaborators. Such a learning process must be formally instituted among parties because of the unique, endogenous, and pervasive uncertainty that characterizes bilateral experimentation. | Analyzes several selected contracts publicly available at the Securities Exchange Commission website. | H | 1 |
| **39**  § | Navi Radjou, Jaideep Prabhu, and Simone Ahuja, “Use Jugaad to Innovate Faster, Cheaper, Better,” Harvard Business Review, no. December 2011 (2011). | A identifiable pattern includes cases of contractual collaboration involving high levels of uncertainty and, indeed, innovation (as in the case, for instance, of the famed Indian *jugaad* economy). They present complex forms of governance to sustain cooperative equilibria and an almost complete absence of formal enforcement but, instead, an often surprisingly-stable system of relational enforcement. These cases have mostly been chronicled in the context of the “informal sector” of the developing world, but also exist in many pockets of the advanced industrial west.  As Radjou, Prabhu and Ahuja describe in the context of India’s famed *jugaad* economy, these sectors are often exemplars in the art of improvisation or frugal innovation, or “overcoming harsh constraints by improvising an effective solution using limited resources. Key to the success of this enterprise is a framework based on deep knowledge and experience. The authors stress four factors, in particular, thrift and inclusivity, but even more importantly bottom-up participation or collaboration and flexibility or adaptability. | Discusses different examples of the India’s famed *jugaad* economy. | L | 1 |
| **40**  **\*** | Pablo Marcello Baquero, Networks of Collaborative Contracts for Innovation (Oxford: Hart Publishing, forthcoming 2020). | Baquero conducted an in-depth study of 11 Brazilian companies that concluded inter-firm collaborations—in the context of a variety of industries, ranging from chemical to biochemical to agribusiness—to co-create advanced innovation, both with other domestic and/or foreign firms | Surveys with 11 Brazilian companies pursuing advanced forms of innovation, from different industries, from 2015-2017. | H | 11 |
| **41**  † | Paul L. Joskow, “Asset Specificity and the Structure of Vertical Relationships: Empirical Evidence Conference Papers to Celebrate the Fiftieth Anniversary of the Nature Of The Firm,” Journal of Law, Economics & Organization 4, no. 1 (1988): 95-118. | In a subsequent article, Joskow examines the particular structure of the price adjustment provisions in a sample of about 250 coal contracts, indicating the importance of contract planning in these relationships | A sample of 250 coal contracts. | M | 250 |
| **42**  † | Paul L. Joskow, “Contract Duration and Relationship-Specific Investments: Empirical Evidence from Coal Markets,” The American Economic Review 77, no. 1 (1987): 168-85. | Contract planning seems particularly important when relationship-specific investments are observable. Joskow’s analysis of a sample of 277 coal contracts supported the hypothesis that, whenever relationship-specific investments are present, longer-term contracts will be concluded, with specified terms and conditions, rejecting the dependence on repeated bargaining. | Sample of 277 coal contracts. | M | 277 |
| **43**  ‡ | Paul R. Milgrom and Barry R. Weingast, “The Role of Institutions in the Revival of Trade: The Law Merchant, Private Judges, and the Champagne Fairs,” Economics and Politics 2, no. 1 (1990): 1-23.  See also  Avner Greif, Paul Milgrom, and Barry R. Weingast, “Coordination, Commitment, and Enforcement: The Case of the Merchant Guild,” Journal of Political Economy 102, no. 4 (1994): 745–76. | A similar picture to that of the Maghribi traders is presented by Milstron & Weingast regarding commerce between merchants in the Champagne fairs in the 12th and 13th century. | Historical analysis. | M | 1 |
| **44-46**  † | R Gilson, C Sabel, and R Scott, “Contracting for Innovation: Vertical Disintegration and Interfirm Collaboration,” Columbia Law Review 109 (2009): 472.  RJ Gilson, C Sabel, and RE Scott, “Contract and Innovation: The Limited Role of Generalist Courts in the Evolution of Novel Contractual Terms,” NYU Law Review 88, no. 41 (June 28, 2012): 210.  R. Gilson et al, Braiding: The Interaction of Formal and Informal Contracting in Theory, Practice, and Doctrine, 110 Col. L. Rev. 1377 (2010) | Analyzing ten prototypical contracts from a number of different industries in their series of articles, Gilson et al claim that these agreements share three features: transactions involving projects which one single firm cannot undertake alone, thus requiring strategic alliances with other companies; a high degree of uncertainty in the development of a new product or a distinct production process that has never been pursued before and whose risk cannot be estimated probabilistically; an iterative process of collaboration between companies to exchange information and know-how and to continuously adjust the terms of the cooperation between the parties, since they cannot establish *ex ante* their relationship’s terms due to the uncertainty involved. | Analysis of 10 prototypical contracts from a number of different industries in this series of articles. | H | 10 |
| **47**  § | Robert C. Ellickson, Order Without Law (Harvard University Press, 1994). | Ellickson found that rural inhabitants in Shasta County resolve disputes with their neighbors regarding escaped cattle with no regard at all to the applicable legal rules. Instead, they create informal norms or apply social norms to solve their disputes, as well as privately adjudicate their disputes, beyond the law. | Based on fieldwork undertaken in Shasta County, California, about how neighbors resolve cattle-related disputes. | L | 1 |
| **48**  ‡ | Robert Neuwirth, Stealth of Nations: The Global Rise of the Informal Economy, Reprint edition (New York, N.Y: Anchor, 2012). | Examines framework based on deep knowledge and experience. The authors stress four factors, in particular, thrift and inclusivity, but even more importantly bottom-up participation or collaboration and flexibility or adaptability. But almost every region of the Global South has an equivalent term, in francophone Africa it is called *l'economie de la débrouillardise*, or literally the economy of resourcefulness—or, simply, System D. | Historical approach. | L | 1 |
| **49**  † | Robinson, David T. & Toby E. Stuart. 2006. Network Effects in the Governance of Strategic Alliances. 23 J. L. Econ. Org. 242-273. | In a sample of over 3800 alliance transactions between pharmaceutical firms and biotechnology research firms, the article shows that firms take more frequent, and larger, equity positions in collaborations with partners who occupy peripheral positions in the network of past alliances. The same is true in transactions with partners who are more distant from them in the network. Thus, better networked firms rely less on explicit control mechanisms such as equity ownership and more on implicit, network-based control, all else equal. | Sample of over 3800 alliance transactions between pharmaceutical firms and biotechnology research firms. | H | 3,800 |
| **50**  **\*** | Russell J. Weintraub, “A Survey of Contract Practice and Policy,” Wisconsin Law Review 1992 (1992). | This empirical study involved 84 returned questionnaires sent to United States corporations, of different sizes (most of them with annual sales over a billion dollars), and from different industries (30.5% were conglomerates having diversified businesses). The results indicated that the contracts – especially long-term agreements – involved governance mechanisms but were rarely litigated in practice. As reported by Weintraub, the respondents said it was likely that they would consider modifications to the contract requested by the other party, indicating the importance of the business relationship and the reasonableness of the request. | 84 questionnaires sent to US corporations, of different sizes, from different industries. | M | 84 |
| **51**  **\*** | S Deakin, C Lane, and F Wilkinson, “Contract Law, Trust Relations, and Incentives for Co-Operation: A Comparative Study,” in Contracts, Co-Operation and Competition, ed. S Deakin and J Michie (Oxford: Oxford University Press, 1997). | Deakin, Lane & Wilkinson have undertaken extensive empirical research, comparing inter-firm practices in Britain, Italy and Germany, challenging the, then-predominant assumption that contract planning and incentive structures were rarely employed in inter-firm relationships. Their results indicate the importance of institutional factors in developing trust between the parties and in creating a field conducive to cooperation between them through applications of the good faith principle, trade associations and standard setting organizations. Their empirical results demonstrated how, in each jurisdiction and sector studied, these elements had a different importance and interactions for the contractual environment. For instance, while in Germany and Italy the concept of good faith is more refined and connected with industry-level regulation to specify this general concept, in Britain, good faith is less important and industry-level standards relatively rare. | Interviews with 62 firms across Britain, Germany and Italy, from two sectors (machine machinery and kitchen furniture manufacturing). The respondents include 14 main buyers firms (6 German, 4 British, and 4 Italian) and 48 suppliers (17 German, 16 British, and 15 Italian). | M | 62 |
| **52**  **\*** | S Macaulay, “Non-Contractual Relations in Business: A Preliminary Study,” American Sociological Review 28, no. 1 (1963): 55-67. | It is based on 68 interviews with businesspeople from 43 companies and six law firms in Wisconsin, United States, across a range of different industries and examines how a sample of mid-sized commercial companies would conduct their contractual long-term inter-firm relationships and solve contingencies and disputes arising from their business partnerships. The results, that revolutionized our understanding of how contracts function, reveal that, in the context of such relationships, legal enforcement has a minimal role. In most situations, parties resolve all contingencies and disputes informally, with no court intervention: a variety of informal incentives propel the parties not to behave opportunistically, including the need to maintain their reputation in the market, the interest of continued relationships with the other firm(s), business peer-pressure, among others. | 68 interviews with businesspeople from 43 companies and 6 law firms in Wisconsin, United States, across a range of different industries, in the 1960’s. | M | 68 |
| **53**  **\*** | Thomas Dietz, Global Order Beyond Law: How Information and Communication Technologies Facilitate Relational Contracting in International Trade (Oxford ; Portland, Oregon: Hart Publishing, 2014). | This empirical study undertook 31 interviews with software experts from Germany, Romania, Bulgaria and India, and 10 follow-up interviews with 10 German software experts. Dietz claims that companies have not been relying on formal enforcement, despite the high risks involved in these transactions, such as delays or non-conformity to quality. Rather, with the support of self-enforcing contracts (creating monitoring mechanisms and dividing performance into different phases), especially reputational networks, they collect information about the reliability of partner firms and trust in the circulation of information about breaches over the network so as to make reputational sanctions efficient and discourage violation of contractual obligations. In an international setting, according to the author, the limits of formal contract law are enhanced by the fragmentation of national laws and the difficulties of private international law to deal with highly complex commercial relationships. | 41 interviews. 31 interviews with software experts from Germany, Romania, Bulgaria and India and 10 follow-up interviews with 10 German software experts concerning contracting practices. | M | 41 |
| **54**  † | Thomas M. Palay, “Avoiding Regulatory Constraints: Contracting Safeguards and the Role of Informal Agreements,” Journal of Law, Economics, & Organization 1, no. 1 (1985): 155–75.  See also:  Thomas M. Palay, “Comparative Institutional Economics: The Governance of Rail Freight Contracting,” The Journal of Legal Studies 13, no. 2 (1984): 265–87. | The importance of informal contracting is particularly highlighted by Palay in a survey of 51 informal, unenforceable agreements between rail-freight carriers and shippers, which were identified through field interviews in the US during 1979. Since the regulatory framework in place in the rail freight contracting was inadequate to provide incentives for certain idyosincratic investments sought by the parties, such incentives were created through promises advanced in informal contracting. | Empirical study a survey of 51 informal, unenforceable agreements between rail-freight carriers and shippers, which were identified through field interviews in the US during 1979. | M | 51 |
| **55**  † | Victor P. Goldberg and John R. Erickson, “Quantity and Price Adjustment in Long-Term Contracts: A Case Study of Petroleum Coke,” Journal of Law & Economics 30, no. 2 (1987): 369-98.  See also  Victor P. Goldberg, “Price Adjustment in Long-Term Contracts Law, Private Governance and Continuing Relationships,” Wisconsin Law Review 1985, no. 3 (1985): 527-44. | Goldberg and Erickson examined ninety long-term contracts for petroleum coke in a period ranging from 1946 to 1973. They found that the contracts contained a number of provisions to protect specific investments and to minimize the risks involved in the contractual collaboration. | 90 long-term for petroleum coke in a period ranging from 1946 to 1973 in the United States. | M | 90 |
|  |  |  |  |  | **N = 26.843** |

**\* Study based on Surveys/Questionnaires/Interviews**

† **Study based on analysis of contractual instruments**

‡ **Study based on historical studies**

§ **Study based on broader case studies – combining analysis of different sources**