ThinkBox

Informal contracting between and within firms [☆]
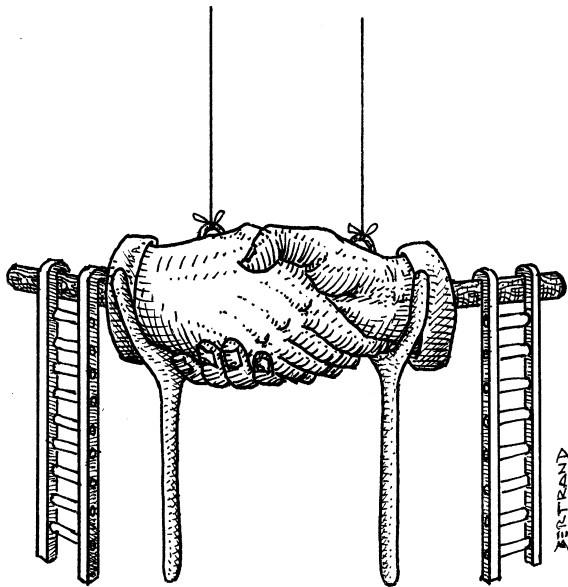
Ricard Gil [a],[*], Giorgio Zanarone [b]

[a] *Johns Hopkins Carey Business School, Baltimore, USA*
[b] *Colegio Universitario Estudios Financieros (CUNEF), Madrid, Spain*

Abstract

While informal contracts are widely used in modern economies, limited systematic empirical evidence is available to researchers and policy makers. This paper aims to fill the gap by discussing a selected sample of empirical works through the lens of a theoretical framework that clarifies the role of informal contracts. We also highlight unexplored research opportunities offered by more recent theoretical models that investigate how informal contracts are built over time, how they are subject to path dependency, and how relational rents are created, and are awaiting empirical analysis.

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[*] Corresponding author.
E-mail: ricard.gil@jhu.edu (R. Gil).

Introduction

The existence and pervasiveness of *informal contracts*—that is, contracts that are enforced by parties rather than courts—has been extensively documented in social science. For instance, managers often rely on "hand-shake" agreements to support their deals (Macaulay, 1963); large corporations such as General Motors rely on informal, internally enforced routines to manage their workers and suppliers (Helper & Henderson, 2014); and long-distance traders enter commercial contracts even in the absence of reliable courts because they are afraid of being ostracized from the market, as under the medieval Law Merchant (Milgrom et al., 1990).

Inspired by these and other works, a rich theoretical literature has emerged in economics, investigating the conditions that make informal contracts feasible, their dynamic patterns, and the way formal contracts help sustain and enforce informal ones by reducing the parties' temptation to renege on their promises. This literature is summarized by MacLeod (2007), and Malcomson (2013). However, there is scarce systematic evidence on whether existing economic theories correctly predict the determinants and consequences of informal contracting. In this paper, we build on our recent work (Gil & Zanarone, 2015, 2016, 2017) to illustrate both the accomplishments and the research opportunities for empirical researchers in this field.

Following Gil and Zanarone (2015, 2017), we begin by summarizing the key predictions received from economic models of stationary informal contracts—that is, contracts that do not change over time—and discussing recent empirical works that provide evidence on these predictions. In the second part of the paper, we suggest directions for future empirical research. On one hand, there are important untested predictions of stationary informal contracting model, particularly those on the coexistence and interaction between formal and informal contract. On the other hand, there are new theoretical predictions that await careful empirical analysis. In particular, the more recent economic models relax conventional simplifying assumptions—namely, symmetric information and the absence of liquidity constraints—and predict that far from being stationary, optimal informal contracts may gradually evolve over time, and may be subject to cycles of cooperation and path dependency. Following Gil and Zanarone (2016), we conclude the paper by discussing some strategies for testing the predictions generated by this new theoretical frontier.

Testing for informal contracting in stationary environments

The choice of enforcement regime

A first set of testable implications from the literature regard the choice of enforcement regime—that is, the extent to which contracting parties use formal or informal contracts to govern their transactions. In particular, because informal contracts are enforced by the parties' threat of terminating a long-term collaborative relationship, their use is predicted to increase when the parties have a long horizon and/or value future payoffs highly, when their outside options following breakdown of the relationship are not too attractive, and when their opportunity cost of honoring informal obligations, and hence their short-run temptation to breach, is not too large.

Ideally, to test these hypotheses we would need measures for the following variables. First, we would need a dependent variable indicating whether a formal contract exists. Second, we would need exogenous measures for the parties' intertemporal discount rate and their payoffs outside the relationship. Finally, we would need variation in the agent's opportunity cost of honoring an informal agreement. We discuss below two examples of empirical works testing this set of predictions. More examples, and a more technical discussion of the underlying econometric challenges, can be found in Gil and Zanarone (2015).

First, Gillan, Hartzell, and Parrino (2009) study the choice between explicit and implicit employment agreements (EAs) for CEOs in S&P 500 firms. They find that the use of explicit EAs (measured by an indicator for whether the firm's SEC filings report an explicit agreement) increases in the CEO's perceived uncertainty about the firm's future prospects (measured by sales volatility, the rate at which firms in the industry change ownership and control, and an indicator for whether the CEO is new to the firm). This result is consistent with the prediction because when the firm's prospects are uncertain (the intertemporal discount rate is high), promising a purely discre-

tionary compensation to the CEO is not credible, because there's a high chance that the CEO-firm relationship will soon end, and hence the compensation promise will not be honored.

Second, Gil (2013) exploits a data set of movie exhibition contracts where 22 distributors place their movies on the screens of one Spanish exhibitor. The author had access to internal company records detailing whether distributors and the exhibitor used formal revenue-sharing terms or not. The paper shows that movies that did well during their US release (which occurs a few months earlier than the Spanish release) are more likely to use a formal contract than movies that were not released in the US, or were released but did not perform well. This result is consistent with the prediction because when the agreement is completely informal, the exhibitor, who collects revenues upfront, is tempted to renege, the more so the larger the movie's revenues. To mitigate the exhibitor's reneging hazard, movies with high expected revenues are governed by formal contracts, preventing the exhibitor from retaining the movie revenues.

Contracts and outcomes under a given enforcement regime

A second set of predictions in the existing literature regards the optimal actions and contract terms within a given enforcement regime (purely formal, informal, or a mixture of formal and informal). When the predictions differ depending on whether informal contracts are used or not, they allow us to indirectly test for the presence of informal contracts and their interaction with formal ones.

Corts and Singh (2004) study the choice between turnkey contracts (akin to fixed-price) and day-rate contracts (akin to cost-plus) in offshore oil drilling. Turnkey contracts provide drillers with stronger incentives to cut costs than day-rate contracts, but are also more rigid, and hence costlier to renegotiate when project specifications need to be changed. Using a sample of 1476 drilling projects, and an instrumental variable approach to control for the endogenous choice of drillers, Corts and Singh (2004) find that, all else equal, projects are less likely to be governed by a turnkey contract when the oil company and the driller have worked together in the past.[1] They interpret this result as evidence that informal self-enforcing agreements and formal incentive contracts (i.e., turnkey contracts) are substitutes, rather than complements.

Zanarone (2009) studies how vertical restraints in Italian car dealership contracts changed after a 2002 EU regulation prohibited manufacturers to assign dealers to exclusive territories. Among other results, he finds that, while contracts before the legal change mostly relied on quantity floors to contain dealers' double marginalization, contracts after the legal change contained a mix of both quantity floors and price ceilings. Zanarone (2009) shows that this result is inconsistent with purely formal dealership contracts, but consistent with the interaction of formal and informal provisions. If dealership contracts were purely formal, retail prices should decrease once

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[1] Similar results are obtained by Kalnins and Mayer (2004) in a study of IT services procurement contracts.

intra-brand competition is liberalized. Hence, price ceilings should be *less* necessary after the legal change. In contrast, if manufacturers and dealers informally agreed to maintain exclusive territories in the shadow of the law, including formal price ceilings would be optimal because price ceilings reduce the dealers' short-run gains from selling outside their territory, and hence their temptation to breach the informal exclusivity agreement.

Gil and Marion (2013) test for whether the expected duration of relationships between contractors and subcontractors improves their ability to bid competitively for procurement contracts. Relying on data for 10 years of Caltrans (California Department of Transportation) auctions, they use the number and value of projects auctioned over the next calendar year as a measure of the future value of relationships between contractors and subcontractors. Their results show that the higher the potential future value of a relationship, the lower the posted bids, even after holding constant the number of past interactions between contractors and subcontractors. This result is consistent with the idea that a longer time horizon improves the performance of informal collaborative relationships.

Macchiavello and Morjaria (2015) have access to an environment—the relationships between rose exporters in Kenya and their international clients—where contracts are never governed by formal provisions. Moreover, they have detailed data on the international spot market auction prices for roses. For an informal exporter-client agreement to be self-enforcing, the expected future value of their relationship must be at least as large as the price the exporter forgoes when honoring the agreement instead of selling on the spot market. Consistent with the idea that these informal enforcement constraint is binding, Macchiavello and Morjaria (2015) show that following an unexpected one per cent change in the spot market price, the quantity of roses in exporter-client agreements is also reduced by one per cent, so that the agreement remains self-enforcing. The idea that measures of the present gains from breaching an informal agreement (the reneging temptation) provide a lower bound for the future value of the relationship is further exploited by two recent empirical papers—Gil, Kim, and Zanarone (2017), who study relational adaptation in the US airline industry, and Macchiavello and Miquel-Florensa (2017), who study the relative performance of informal contracts and vertically integrated supply chains in the Costa Rica coffee industry.

Finally, Barron et al. (2016) explores how movie distributors and exhibitors informally adjust revenue sharing terms in movie exhibition contracts, and finds that adjustments are not contracted formally—that is, realized revenue sharing systematically differs from the terms in the formal revenue-sharing agreements. They argue that such adjustments occur informally to save on contracting and negotiation costs, and to affect the allocation of movies to screens. In particular, Barron et al. (2016) shows that renegotiations of pricing contracts are related to decisions about whether to continue show a movie and, if so, whether to show it in prime time.

Future work

Untested predictions from standard informal contracting models

Having reached this point, we can address where this literature is lacking the most. There is little evidence on how the cost/quality of formal contracts affects the use/performance of informal ones. When the parties' fallback option following breakdown of an informal relationship is to keep trading under arm's-length formal contracting—as opposed to termination—this effect, and hence the extent to which formal and informal contracts are complements or substitutes, is ambiguous (e.g., Klein, 2000; Baker, Gibbons, & Murphy, 1994). On the one hand, an increase in the cost (decrease in the quality) of formal contracts makes it harder to use such contracts to reduce the parties' short-term gains from breach, thus making informal agreements harder to enforce. On the other hand, poorer formal contracts reduce the parties' fallback option after breaching the informal agreement, thereby increasing their incentive to cooperate.

The closest suggestive empirical evidence is Johnson, McMillan, and Woodruff (2002). They find that in European countries from the former Soviet block, trade credit increased when courts were believed to reliably enforce formal contracts. However, this relationship was weaker when suppliers were locked into a bilateral monopoly relationship with customers and, therefore, were likely to keep dealing with them under arm's-length formal contracting following a breakdown in the informal relationship. While the evidence in Johnson et al. (2002) is suggestive, it is limited by obvious measurement and endogeneity problems. Thus, identifying an appropriate experimental setting to thoroughly assess how the availability of formal contracts affects informal agreements constitutes a clear opportunity for future research. Such research may exploit exogenous changes in contract law that affect the feasibility of termination—as opposed to arm's-length contracting—as a fallback option, such as termination laws in franchising (e.g., Brickley, Dark, & Weisbach, 1991). Since court quality and the regulation of contract termination have been found to vary across countries and industries and within countries, the test we are suggesting may exploit variation across countries, within a country over time, or even within a country and year but across different industries.

Testing the new models of informal contracting

Empirical work testing non-stationary dynamic models of relational contracting are completely missing from the literature. An important contribution of these models is to relax two simplifying assumptions from the more conventional models—namely, symmetric information and the absence of liquidity constraints—and investigating how the self-enforcement constraint affects the evolution of optimal informal contracts over time. Examples of these models are MacLeod (2003) and Fuchs (2007), Halac (2012), and Li and Matouschek (2013) on discretionary incentives, and Board (2011) on partner

selection in supply chains. To illustrate how one could attempt to test these models, and given that their predictions vary widely and hence are hard to summarize, we briefly discuss Halac (2012) as a representative example, and offer some ideas on how to test her predictions in the hope that interested researchers may use our discussion as a starting point to push the empirical frontier further. We provide a more detailed discussion of how to test the new models of informal contracting in Gil and Zanarone (2016).

In a principal-agent model where the agent does not know how much the principal values her future relationship with him, a key result in Halac (2012) is that both the initial incentive contract, and its evolution in the course of the relationship, importantly changes depending on whether the principal or the agent has bargaining power. More precisely, her framework predicts that at the beginning of a contractual relationship, bonuses in an informal incentive contract should be higher, relative to those in an optimal formal contract, when the agent has a strong prior belief that the principal values the relationship, and hence is able to commit. Second, the likelihood of defaults on informal bonuses by the principal should increase in the agent's prior belief when the principal has bargaining power, but not when the agent has bargaining power, as in the latter case ex ante screening ensures that there are no defaults in equilibrium. Finally, informal bonus payments, and the probability of default, should be increasing over time when the principal (the informed party) has bargaining power, and non-increasing over time when the agent has bargaining power.

To test these predictions, we would need at least four variables: (i) the incentive bonus offered at the beginning of an informal principal-agent relationship; (ii) the evolution of informally contracted bonus payments in the course of the relationship; (iii) the allocation of bargaining power between the principal (a company, a manager, a buyer) and the agent (a CEO, a worker, a seller); and (iv) the agent's prior beliefs regarding the principal's type (low or high commitment type in the model). As said before, collecting data on whether incentive payments are formal or informal is challenging but possible (Gillan et al., 2009; Gil, 2013). The agent's beliefs about the type of the principal can be assessed by looking at whether the agent has some knowledge of the principal's history and reputation—perhaps through public rankings such as Fortune's "Best Companies to Work For" index—or has specific expertise to judge the principal's type—for instance, because he has been an employee or frequent business partner of the principal in the past. Finally, variables that measure the bargaining power of the agent would be the degree of unionization of labor force in a company or location, and whether the principal is a monopsonist (e.g., sole employer for all workers) in the local labor market.

Conclusion

In this paper we have discussed how further evidence on informal contracting can be produced. Overall, we find that the existing evidence is broadly consistent with the theoretical predictions from economic models of informal contracting. At the same time, we notice that the empirical research on informal contracts has substantial room to grow and presents plenty of opportunities. We have hopefully proved this point by showing how current tests of the theoretical predictions can be improved, and which types of predictions are left untested. We hope our paper will foster future research that will test and feed our understanding of informal contracts and of their interaction with formal ones.

Conflicts of interest

The authors declare no conflicts of interest.

References

Baker, G., Gibbons, R., & Murphy, K. J. (1994). Subjective performance measures in optimal incentive contracts. *Quarterly Journal of Economics*, *109*, 1125–1156.

Barron, D., Gibbons, R., Gil, R., & Murphy, K. J. (2016). Relational adaptation under reel authority. *Mimeograph*.

Board, S. (2011). Relational contracts and the value of loyalty. *American Economic Review*, *101*, 3349–3367.

Brickley, J., Dark, F., & Weisbach, M. (1991). The economic effect of franchise termination law. *Journal of Law and Economics*, *34*, 101–132.

Corts, K., & Singh, J. (2004). The effect of repeated interaction on contract choice: Evidence from offshore drilling. *Journal of Law, Economics and Organization*, *20*, 230–260.

Fuchs, W. (2007). Contracting with repeated moral hazard and private evaluations. *American Economic Review*, *97*, 1432–1448.

Gil, R. (2013). The interplay of formal and relational contracts: Evidence from movies. *Journal of Law, Economics and Organization*, *29*, 681–710.

Gil, R., & Marion, J. (2013). Self-enforcing agreements and relational contracts: Evidence from California highway procurement. *Journal of Law, Economics and Organization*, *29*, 239–277.

Gil, R., & Zanarone, G. (2016). New frontiers in the empirical research on informal contracting. *Journal of Institutional and Theoretical Economics*, *172*(June (2)), 390–407.

Gil, R., & Zanarone, G. (2015). *On the determinants and consequences of informal contracting.*. Available at SSRN: http://ssrn.com/abstract=2560520

Gil, R., & Zanarone, G. (2017). Formal and informal contracting: Theory and evidence. *Annual Review of Law and Social Science*, *13* (in press, volume publication date November 2017).

Gil, R., Kim, M., & Zanarone, G. (2017). *The value of relational adaptation in outsourcing: Evidence from the 2008 shock to the US Airline Industry*. Hitotsubashi Institute of Advanced Study. Discussion paper series No. HIAS-E-32.

Gillan, S., Hartzell, J., & Parrino, R. (2009). Explicit versus implicit contracts: Evidence from CEO employment agreements. *Journal of Finance*, *64*, 1629–1655.

Halac, M. (2012). Relational contracts and the value of relationships. *American Economic Review*, *102*, 750–779.

Helper, S., & Henderson, R. (2014). Management practices, relational contracts, and the decline of general motors. *Journal of Economic Perspectives*, *28*, 49–72.

Johnson, S., McMillan, J., & Woodruff, C. (2002). Courts and relational contracts. *Journal of Law, Economics, and Organization*, *18*, 221–277.

Kalnins, A., & Mayer, K. J. (2004). Relationships and hybrid contracts: An analysis of contract choice in information technology. *Journal of Law, Economics, and Organization*, *20*, 207–229.

Klein, B. (2000). The role of incomplete contracts in self-enforcing relationships. *Revue D'Économie Industrielle*, *92*, 67–80.

Li, J., & Matouschek, N. (2013). Managing conflicts in relational contracts. *American Economic Review*, *103*, 2328–2351.

Macaulay, S. (1963). Non-contractual relations in business: A preliminary study. *American Sociological Review, 28*, 1–19.

Macchiavello, R., & Miquel-Florensa, P. (2017). *Vertical integration and relational contracts: Evidence from the Costa Rica coffee chain*. University of Warwick (Working Paper).

Macchiavello, R., & Morjaria, A. (2015). The value of relationships: Evidence from a supply shock to Kenyan rose exports. *American Economic Review, 105*, 2911–2945.

MacLeod, B. (2003). Optimal contracting with subjective evaluation. *American Economic Review, 93*, 216–240.

MacLeod, B. (2007). Reputations, relationships, and contract enforcement. *Journal of Economic Literature, 45*, 595–628.

Malcomson, J. (2013). Relational incentive contracts. In R. Gibbons, & J. Roberts (Eds.), *The handbook of organizational economics*. Princeton: Princeton University Press.

Milgrom, P., North, D., & Weingast, B. (1990). The role of institutions in the revival of trade: The medieval law merchant. *Economics and Politics, 2*, 1–23.

Zanarone, G. (2009). Vertical restraints and the law: Evidence from automobile franchising. *Journal of Law and Economics, 52*, 691–700.