**Empirical Research in Contracts: Watch your step**

A research note.

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I.Introduction: Ronald Coase offered strong motivations for scholars to engage in empirical analysis of contracts. In his famous speech at the Swedish Academy he stated that there is a large amount of information available about business contracts that are unknown to economists. New initiatives of research of contracts applied to governance and organization have been observed since then, as well as initiatives to collect contracts and organize databases to facilitate the research focused on the institutional structure of production. As a result of his initiative, different research centers around the world initiated consistent collections of business contracts. Examples are found in US, European as well as in Latin American universities. The agricultural census of US and the USDA initiatives focusing agricultural contracts also work in the direction of collecting information on contracts. Similar efforts are seen elsewhere.

The motivation for the present study is to contrast the evolution of the theory of economy of organization and the profile of the data of contracts that is being collected. In a nutshell, if the goal of organization economists is to study how the real economic system works, then I raise the argument that the use of data collections of contracts does not provide sufficient information and only captures part of the incentives present in most of the institutional arrangements. The proposition is that if data based on existing contract collections is used not considering the transaction dimensions governed by other means than contracts or not considering dynamic relational and learning aspects embedded in the contractual relation, the results can lead to false conclusions.

The basic question discussed in this paper is if and how the data collections are actually handling the extra-contract information and inform about the categories of dynamic contractual elements that affect the mechanisms of governance and should be controlled. The contribution of the paper is to highlight that written contract represents only the legal exchange of property rights, missing the economic rights exchanged, what “per se” is not a new argument, but is being largely ignored. The paper contributes by adding that the contract collections tend to miss dynamic elements that characterize the observed institutional arrangements adding to the traditional discussion observed in the literature.

Two points are relevant in support for a revision on the existing expectations related to the performance of empirical studies based on contract data bases. First, if scholars access a contract data collection without being informed about the real conditions that were in place when the contract was actually designed, then relevant missing information might distort the analysis. Second, if one ignores the existence of a relational evolution of the entire contract relation, and if the dynamic elements that characterize the relational aspect of the transaction from the time when contract data is actually collected to the time when the empirical studies are carried, then biased conclusions are expected to result.

The paper reveals the difficulties attached to the empirical study of contracts and adopts a descriptive theoretical analysis to support the main research argument and presents cases where large parts of the property rights transacted are typically of economic instead of legal nature and when relational aspects evolve rapidly.

The paper is organized as follows. In part two, I present the concept of contract raising the issue of formal and informal elements of a transaction. I focus on economics of organization and the contract approach to the study of organization and governance, reviewing some of the different empirical approaches in economics of contracts. In part three, the contribution focus mainly on the balance between formal and informal transaction elements and the discussion of dynamic aspects usually absent from contract databases pointing to the expected empirical biases of research based on collection of contracts. Finally part four concludes.

II. Empirical Work in Contracts and Organizations: Contracts are defined as agreements that are enforceable by the legal the system (Masten,1998). This definition contrasts with the focus of the study of the institutional structure of production, as presented by Coase (1991) and expressed in the mechanisms of governance discussed by Williamson (1996) that aims to explain and predict the strategy of organizations as observed in the way they govern, design and perform value generating transactions. Contracts are seen as one of the mechanisms to enhance human cooperation in production allowing the protection of value, and functioning as incentives for joint production efforts. Transactions and contracts are different theoretical constructs, the second meaning a sub-set of the mechanisms that are designed to govern the first. Contracts consider only the legally enforceable part of an agreement, while the transaction represents an exchange of property rights that far exceeds its legally protected dimensions.

The sharp distinction between the empirical applications based on agency theory and transaction cost economics in its governance version is relevant for the purpose of the present study. The governance mechanism is seen as an answer of economic agents that consider possible future strategic decisions of the parties involved in the transaction, presentation being a relevant concept. Ex post adjustments dominate in transaction cost theory while ex-ante decisions are the key elements in agency theory.

Masten (op.cit) presents a topology of different sub-fields of research in contracts, ranging from formal principal-agent model anchored in optimal allocation of incentives and risk, to the literature of law and economics anchored in the role of courts and the judicial system. The author also covers the relational contract theory that suggests the contract is a dynamic frame that bounds the realization of transactions. The author covers the wide range of elements in the formalized theory of contracts including the complete contracting based on full rationality, and the incomplete contracting framework where he presents some reasons that explain the existence of potential gains, bounded rationality being the most common explanation, but does not embrace other explanations for contract incompleteness.

Masten and Saussier (2002) present an overview of the literature on econometrics of contracts. The authors restrict the chapter to focus transaction cost economics and agency approaches. Their contribution is relevant to set the field in terms of the dominant empirical approach, but leaves ample room for other approaches, as resource based view and the vein of neuroeconomics interested to unbundle the complex determinants of human rationality. The typical studies pointed by the authors as examples are related to contract choice, contract duration, franchising and case studies on contracts, mainly related to the research of court cases.

I am aware that any attempt to cover the existing empirical literature on contracting is likely incomplete, due to the large number of scientific papers in different approaches. New dimensions of econometric analysis of contracts are emerging. One example is the econometric analysis of judiciary data bases to study contract breaches and second order effects of courts decisions. Existing information on courts databases are useful for empirical analysis of contract breaches as seen in Leles and Zylbersztajn (2007).

The adoption of case studies is also a relevant venue for research in economics of organization. As stated by Alston (2008) cases are useful tools to better understand the impacts of institutional changes have on institutional arrangements. He also states that cases improve the ability to first understand an issue prior to modeling it. I would add that case studies might be one solution to up-date the dynamic aspects of the contract relation allowing for a better use of contract data collections.

Empirical research in any field of knowledge presents the barrier of availability of useful data, aligned with the theory. In neoclassical economics, market prices and quantities are sufficient, but not always represent the real dimensions of the transactions values. Many margins are left out from markets being allocated by other means. In contract analysis, some dimensions are captured by the data, but not always in a consistent way with the theory. Coase (op. cit.) points to the need to enhance contract data collection and systematization. He concluded that the lack of data represents the main obstacle faced by researchers. The conference held in 1990 at the University of Chicago was a landmark that motivated efforts for more consistent efforts to organize the information about contracting.[[1]](#footnote-2)

Sykuta (2001,2008) comments on the empirical research on contracting and organizations, and discusses the existence of consistent efforts applied to the organization of collections of contracts to feed the empirical efforts on economics of organization and governance. The author states that since contracts are difficult to obtain, studies are often driven by fortuitous access to contract information of a particular sort.

Recognizing the relevance of the continuous efforts on contract data collection made by research centers up to the present date, my objective in the next session is to contribute by raising some limitations of the existing data for the purpose of carrying empirical research in institutional structure of production. My objective is to reveal the existing structural limitations in order to permit consistent use of the data.

III. Contracts and Norms: The relevance of non-contractual transaction dimensions and dynamic elements of contracts have been discussed in the field of economics of contracts and organization. At the same time two fundamental aspects of the theory are not receiving the necessary attention by the authors dedicated to the effort of collecting data to feed the empirical efforts applied to contract analysis. This evidence paved the road for this section. The two aspects are the contract and agreement dichotomy and second, the relational dimension of the contract.

The literature on relational contract is the starting point to base my argument. As stated by Macneil (1978) transactions are rarely discrete, disconnected from the past and independent from its likely future impacts. Macneil is even more critical when he states that “ …the existence of the market that the discrete transactional system presupposes eliminates the necessity for economic relations between firms.”(Macneil, op.cit, p.861). The author considers that at the neoclassical branch of contract theory, the original contract is just a reference point and the truly relational approach devises the entire relation as being the relevant scenario. He adds that the written part of a contract function as constitutions establishing legislative and administrative process for the relation (p.894) and a great deal of change in contractual relations comes through dynamic adjustments (p.895). This point was later adopted by Williamson (op. cit) as one of the main pillars of the governance mode of transaction cost economics. He observes that contracts just put in motion a complex transaction structure.

Macneil´s approach is aligned with Klein´s analysis on self enforcement of implicit contracts (Klein, 2000). He states that contracts leave many elements of intended performance unspecified and unenforceable by courts. His view is that contract parties are expected to engage in the effort of making explicit terms not only because this might help courts to make future decisions in case of contract breaches, but also because transacting parties learn about each other while drafting contracts. Klein (op.cit) focuses his analysis on the private self-enforcing mechanisms that shape the transaction.

The relevance of informal norms to bound economic transactions is discussed by Dixit (2004). He points to the importance of the law and at the same time the problem of the imperfect mechanisms of legal institutions. Even if one considers the relevance of law he states that without informal groups and societies, too much potential value would go unrealized. He adopts two definitions, for institutions and organizations and point to the interactions and feedbacks between both. Based in Greif (2000) he defines institutions as systems of social factors-such as rules, beliefs, norms. He also defines organizations that enable, and constrain the actions of individuals. Organizations are groups of individuals that operate within the general framework of institutions, and implement the rules and norms of the institutions.

Dixit bridges the concepts of macro and micro institutions and considers that norms can, in many cases, develop rapidly as society needs to implement adjustments. This point departs from the existing and dominant view that institutions can be taken as exogenous, since they change slowly. His main concern is with micro issues of governance of transactions, specifically with property rights and contracts (p.8).

Informal norms are also discussed in Hart (op. cit.), being defined as non-legally enforceable agreements. He points that economic agents rely on formal norms enforced by courts to uphold the relationships but recognizes that many economic activities are sustained by self-enforcing mechanisms. After considering that norms are difficult to handle empirically, he states that norms have not added a great deal to our understanding of such issues as the determinants of firm boundaries. Differently from Dixit and others he considers that social norms can be taken as given, since they change in a very slow fashion. He concludes that trust, seen as an informal norm, does not change the conventional wisdom about the determinants of the boundaries of the firm.

I consider the existence of a controversy in the theory that is relevant to the discussion of strategies of data collection on contracts. One the one hand, if informal rules are not relevant as proposed by Hart, then existing collections of contracts might be sufficient to carry balanced studies on organizations. I argue that the contrary holds based on the three following arguments: First informal institutions should not be taken as given. As stated by Dixit they can change even in short periods of time. Second if we ignore norms many institutional arrangements become unexplained by formal norms, as stated Elinor Ostrom in natural resources exploration and Avner Greif in the analysis of medieval societies. Third, Hart´s assumes macro institutions as exogenous, and his analysis focuses only inter-firm relations and not internal organization of firms nor applies to macro-instituitonal norms.

Transaction cost economics is rooted in different elements that highlight the need to adopt careful approach to the use of contract data bases. I have already mentioned that Williamson´s view is rooted in the relational contract theory. Likewise the measurement branch of transaction cost economics offers an argument. The literature on transaction cost economics has two main veins. Barzel´s approach is based on property rights designed to handle both inter and intra firm organization opening room to complement this analysis on data collection on contracts. He observes that the institutional structure of production is affected by the way that agents succeed in measuring variability associated with inputs and outputs of any transaction.

The particular contribution of measurement cost theory proposed by Barzel (1989,2002) represent a strong element in supporting the relevance of mechanisms other than contracts that frame the transaction relations. The measurement branch of Transaction Cost Economics suggests that a transaction can be decoupled in many attributes. Each attribute has a distinct characteristic in terms of measurement costs. Under this perspective, easy to measure attributes are exchanged based in contracts since courts are able allocate property rights in case of contract breach. This part of the transaction represents the exchange of “legal rights” based in formal contracts. Difficult to measure attributes are also potentially present at the transactions. Courts are expected not to perform efficiently, due to measurement costs and imperfect observability. As a result transaction parties choose extra court mechanisms to protect property rights. Based on measurement cost approach, “economic rights” instead of legal rights are exchanged and a particular transaction dimension is not contracted but instead is exchanged supported mainly by reputation mechanisms.

As expressed in Barzel (2006) contracts delineate some, but not all relevant attributes in a transaction. Attributes associated with product and factors of production are susceptible to variability raising the possibility that part of the transaction value fall in public domain subject to capture. Measurement costs of transaction dimensions might preclude the optimal allocation of factors and raises the risk of capture.

<insert figure 1 about here>

A Conceptual Model: Barzel (2006) states that contracts are simple while transactions are complex and characterized by many unpriced margins. Transactions usually have many agents and many margins each characterized by some degree of measurement difficulty. Figure 1 represents the value embedded in a given transaction. Assume that transactions generate value. The protection of value is approached by a property value index ranging between zero and one, meaning that if it equals zero no property right is protected and if equals one transactors leave in a world of zero transaction costs. There are two relevant dimensions to be considered. Contracts are defined as C and agreements as A.

First, as proposed in Barzel (1996) the measurement cost model suggests the existence of easy to measure attributes related to legal rights. These attributes are suitable to be contracted since agents and judges are able to measure transaction attributes making decisions based on measureable and observable evidences. Difficult to measure attributes are not contracted and therefore agents are expected to develop alternative mechanisms of protection to protect value that are independent from courts. If both mechanisms fail to protect rights associated with the transaction, then some value remain in public domain, being subject to capture.

Second, the relation between C and A changes through time obeying different patterns. There are many variables that affect the allocation defined by C/A. Shifts in the C/A ratio result from:

1. Development of relational aspects of the transaction lowering the costs of informal mechanisms to protect property rights. Rises C/A implies in more informal transactions.
2. Development of lower cost mechanisms of measurement of attributes lowers C/A implying in more formal transactions.
3. Development of trust and other informal relational mechanisms lower C/A implying in more informal transactions.
4. Changes in the costs of functioning of courts and formal legal institutions. It might work in both directions, depending if courts improve or deteriorate the costs in face of the needs of the society.
5. Dynamic learning elements both among transaction parties and competence formation of judges are relevant to explain the limits between easy and difficult to measure attributes.

A possibility is that external impacts hit the transaction and are not matched by formal or informal mechanisms then value in public domain is expected to increase. At the limit the particular transaction might not be performed, since the value in public domain is too large. The implications of the points raised are discussed in the final session.

IV. Discussion and Conclusions:

The relevant contribution of Ronald Coase opened room for the evolution of the modern family of theories of the firm. His main motivation is to depart from the non-realistic concept of production function moving towards the real world of organizations. The increase in the interest in empirical analysis of contracts is a result of his initiatives. The leitmotif offered by Prof. Coase has shown positive results, allowing the research on institutional structure of production to be carried on a more consistent way. Examples of papers published based on data collections of contracts are found in the literature, as can be observed as in the papers published by Joskow (1987) based on the existing collection of contracts of coal in US. Another typology of studies is based on contract relations from original survey and interviews with actual contract parties, exploring reputational mechanisms in addition to static characteristics of transactions. This kind of study based on primary contract data is found in Zylbersztajn and Lazzarini (2005).

In order to perform empirical work on contracts as relates to the institutional structure of production, scholars must be aware that the contract represents only part of the bundle of property rights actually exchanged. Each case should consider the information on economic property rights, which are not usually presented and collected in the existing data collections on contracts. Also in each case it is necessary to check how the relational aspects of the transaction has evolved particularly when the analysis aims at matching the contract characteristics defined when the contract was drafted and the existing observed institutional arrangements.

The aim of the research in economics of contracts as relates to the institutional structure of production is to study contract choice and contract structure. Not only vertical integration but also transactions carried inside the firms are subject of analysis. In this paper I am interested in how the existing collection of data on contracts matches the theoretical construct in economics of organization.

The governance branch of transaction cost economics offered a rich vein for empirical analysis, since it depends on observable information of inter-firm transaction arrangements and transaction characteristics. Therefore the alignment hypothesis generates testable hypothesis mainly for the make or buy decision. Relational contracts and the concept of presentation are considered as being of fundamental relevance for the TCE theory. However the theory is reductionist in the sense that collapses all relevant information in the categories of asset specificity, frequency and uncertainty. This is a good start, but restricted to the three aspects, remains distant from the real world of transactions governance mechanisms.

I do not consider that the treatment given to informal norms is being properly handled in the empirical literature. In cases when the study of organization take as granted that informal institutions change too slowly so that institutions can be considered as given and when one ignores the short term dynamic transformations that the firm, seen as a micro-society, presents. My comment on that is that micro and micro norms are interconnected as expressed by Dixit and we need to apply our analytical effort to reveal the characteristics of the theoretical connections.

My main proposition is that all the dynamic aspects might evolve through time and therefore the originally drafted contract is likely to disconnect from the actual governance mechanism. If our aim is to study what goes on in the real world, then I suggest the careful examination of the likely dynamic changes presented in section III when using contract data basis. More effort to identify the causes of change between easy and difficult to measure attributes is at the edge of measurement cost theory.

Costs to organize, maintain and use contract data basis are affected by the points discussed in this paper. First the difficult to measure transaction elements represent a structural bias at the time to collect the contract data. What is written is what potentially enforceable by courts, therefore measurable. The existence of difficult to measure dimensions in a contract might be associated with invisible enforcement mechanisms that, once ignored, might lead to incorrect analytical results. Contract collections focus on classical contract law while the real world is characterized by relational contracts.

Agency theory makes explicit the basic analytical elements, being suited for an ex-ante analysis of risk and incentives allocation. Judiciary cases are relevant to allow the study of ex-post property rights enforcement, but face the problem of dealing with difficult to measure transaction attributes, unknown to courts.

The empirical efforts in economics of organization should consider that the goal of studies of the institutional structure of production is to capture determinants of contract choice and contract structure. Our goal is also to incorporate the existing dynamic elements in the theory designed to explain the existing micro-institutional arrangements. In order to understand micro-institutions it seems relevant to keep the efforts to unbundle some important concepts. One is the empirical treatment given to relational contract elements. Second is the treatment given to difficult to measure transaction dimensions. Third is to move on in the general concept of bounded rationality to shape more precise theoretical construct, towards neuro-mechanisms that limit our capacity to make choices. Fourth is to embrace the effort to better connect micro and macro institutions.

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1. The pioneer effort on contract collection was made by the Center for the Study of Contracts and the Structure of Enterprise at the University of Pittsburgh, followed by the Contracting and Organization Research Institute at the University of Columbia-Missouri. [↑](#footnote-ref-2)