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**Contracts and Agreements: Shifter Parameters in the Measurement Cost
Theory.**

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Contracts and Agreements: Shifter Parameters in the Measurement Cost Theory.

Abstract: The concept of “contract” has similar but not identical interpretations for lawyers and economists. Both Economic and Legal theories distinguish transactions from contracts based on the possibility to rely on court enforcement. Formal and informal promises are enforceable by courts, however there is not a clear distinction between a contract and an agreement since agents do not know a priori the competence of courts to interpret and enforce promises. The measurement branch of transaction cost economics proposes that economic actors are motivated to protect legal and economic rights, adopting reputation mechanisms when they foresee that courts face measurement difficulties to allocate property rights in case of disputes on a specific transaction dimension. Otherwise an external contract is expected to be chosen. The present paper introduces the effect of capabilities that affect the ability to adjudicate. This concept adds to the measurement cost theory as it stands, being part of the theoretical construct of shifters that affect the choice between formal contracts and informal agreements. Two concepts are introduced in this paper: measurement competence of contract parties and competence of courts to adjudicate. The paper introduces dynamic effects in the measurement cost theory since competences are cumulative, knowledge is dispersed and courts develop routines to organize the knowledge. As a result, the paper closes a gap between the measurement branch of transaction cost theory and the capabilities perspective, opening new veins for empirical analysis.

JEL:D23,L22

1. Introduction:

Legal theory treats informal promises as contracts provided they are potentially enforceable by courts. Economic theory suggests otherwise, that even if courts can potentially enforce promises still agents might choose private long term mechanisms if they foresee that courts will face difficulties to measure, interpret and enforce the allocation of property rights in case of disputes.

The present paper elaborates on the ability of courts to adjudicate, discussed in Barzel (2002). The capabilities perspective is applied to the production of decisions by courts which is not explicit in the measurement cost theory as it stands. The paper also elaborates on the theoretical shifters that affect the choice between formal contracts and informal agreements in addition to measurement technology and standards. The shifters are: competence of private (contracting) agents and competence of courts. The results points to the possibility of dynamic effects in the model prediction as the measurement capability changes, opening room for empirical analysis.

The paper is structured in five parts and references. The second part introduces the capabilities perspective in the framework of measurement cost theory, identifying the variable related to the cognitive competence of courts. The second part also explores the judge's ability to make decisions suggesting that competences are not given, but changes over time as routines evolve in courts. The third part discusses how changes in competences and routines affect the predictions of Measurement Cost Theory (hereafter MCT). Part four offers an example and finally, part five concludes.

2. Knowledge in Courts.

The use of scarce knowledge is the most important problem to be solved in society. If one possesses all relevant information and a well defined set of preferences, then the problem we face is of pure logic - Hayek (1945, p.519). Judiciary systems differ in the ways knowledge is generated, managed, accumulated and accessed. Also they differ in how judges recognize that they do not possess on an individual basis all relevant information needed to perform complex tasks to make judgments, allocate property rights and signal the society.

Capabilities play a relevant role to explain the performance of organizations in general, and as we suggest here, of courts in particular. The concept of capabilities is defined by Langlois and Foss (1999, p.208) as “Team embodied and partially tacit production and organization knowledge that can be employed by team members for a strategic purpose”. Complex organizations develop capabilities in form of structured knowledge, experience and skills, defined as repetitive patterns of activities in an entire organization. Routines replace the cognitive limitations of individuals to access and organize the knowledge necessary to perform productive tasks. Even in cases where routines are well established individuals still play an important role, since they have to interpret the needs and choose the adequate routines from his or her repertoire.

Much of the capabilities perspective and resource based theory has been developed inspired by the theory of the firm, in the sense that they search for alternative explanations for the firms boundaries and internal organization. This study suggests that the concept is applicable to other organizations, such as courts. Particularly the judiciary, seen as a governmental organization designed to produce judicial decisions. If the judiciary performs perfectly, no cognitive biases and limitations will affect the decision, no capture problems

will be found guaranteeing that the parties involved in the dispute will be protected by efficient allocation of property rights. However one can state that knowledge about the details related to the disputes is not perfectly known by the judges, previous court knowledge might not be easily available and the set of preferences of the litigants is not in the mind of the judges. Technicalities might be present, parties (litigants and judges as well) can cheat and be subjected to asymmetric information.

Mistaken allocation of property rights affect transacting parties and offer perverse signals to potential traders. The costs of mistaken decisions or of correct decisions that comes too late to the transacting parties are the real effects of poor judiciary performance, in a world of positive transaction costs.

Therefore the production of judicial decisions is seen here as a complex task that results from cooperation among specialized parties, leading to the question on how knowledge is accumulated and accessed in the process to produce judicial decisions. The same question asked to the firm can be extended to the judiciary, since individual knowledge is too limited in face of the complex tasks that are performed. If the judge is not seen as an omniscient entity, then his or her cognitive limitations suggests that cooperation and therefore coordination affects the production of decisions.

Relevant to our case are the following aspects:

- Routines develop in the judiciary and represent the stock of competences that a given court can access in order to perform.
- Since courts operate as part of complex judiciary systems, there are rules that bound the behavior of judges. If cooperation is necessary and routines are developed connecting parties, then the judges' discretionary power is controlled.

- Organizational memory adds to the individual competence of agents (judges) affecting the stock of knowledge available at any given time.
- Routines established in the judiciary might affect the process in terms of the quality and timing of the final decision.

The theory suggests that the competence to perform observed in complex organizations is not static, judiciary being a case. It varies at any given time across the different organizational cells and it is also expected that competences and performance will change through time.

The question of how courts deal with knowledge becomes of considerable relevance. I presume that in a complex world judges are limited in terms of their abilities to understand complex phenomena. It might take too long to accumulate enough competence to judge a particular case. Therefore routines are developed in order to accumulate and exchange knowledge.

The most obvious example of how routines affect the performance of the judiciary is the way jurisprudence is built. Different legal traditions deal differently with jurisprudence. The effect of the existence of routines that makes easier to access specific knowledge is to speed up the process, shortening the length of time to produce a decision, and also to restrict the discretionary power of the judge, enhancing the predictability of courts. As stated by Barzel (2002) restricting the discretionary power of the state is reached by collective action. If courts are too powerful, they accumulate exaggerated power creating mechanisms of protection. Therefore one can understand why in less developed civil law countries it is difficult to implement routines to change jurisprudential mechanisms.

A second example of mechanisms designed to enhance the access to specialized knowledge in the judiciary is the organization of specialized

courts. Some countries have courts designed to deal with labor, or land conflicts, aiming to affect the quality of judicial decisions.

The relevant point for our purpose can be stated as: a) courts perform complex tasks that are affected by cooperation and routines. b) Courts differ in terms of the way they deal with knowledge that affects the performance. c) Contracting agents realize that courts are limited to produce decisions and therefore to protect legal rights. d) cognitive limitations and biases originated from capture can change over time through the internal evolution of routines (tacit knowledge) and coordination mechanisms (structured knowledge).

If court competences change, then the predictions of the MCT are subject to shifters which are discussed in the next session.

3. Measurement Costs and Capabilities: an initial dialogue.

Legal and economic rights are key concepts in measurement cost theory defining how trade will be organized (Barzel, 2002, p.81). Easy to measure attributes are associated with legal rights that can be privately contracted since they are guaranteed by state enforcement. Such transaction dimensions are expected to be placed outside the organizations. Difficult to measure attributes are associated with economic rights which are privately guaranteed by reputation mechanisms. Transaction dimensions with such characteristics are expected to stay inside the organization or standing on long term relational agreements. Therefore the logic of vertical integration developed in MCT differs from the protection of quasi rents associated to asset specific investments.

Transactions can be decoupled in their dimensions. Different levels of complexity correspond to the dimensions being transacted. Each transaction is

supported by contracts and agreements the proportion being determined by measurement costs.

<insert figure 1 here>

If positive gains expected to result from the transaction are subject to risk of dissipation or capture, agents will engage in cooperative efforts to control capture either by private or by public mechanisms. The theory suggests that the absolute measurement costs of a given attribute is a key aspect determining the scope of the firm. Barzel (2001,2002 p.25) suggested, but did not elaborate, on the capacity to measure of public and private agents. The author states that “third party enforcement requires, besides the power to enforce, the commitment to enforce and the ability to adjudicate”. The author points to two aspects that affect the decision, one being the measurement technology and the second the definition of standards.

A basic proposition designed in this study adds that courts capabilities to measure are a third relevant aspect. It follows that the prediction of the measurement cost theory is affected by shifter parameters; measurement technology and capabilities which are not exogenous to the model.

- a) Technology: Measurement costs are affected by the status of the development and the adoption of measurement technologies. Difficult to measure transaction attributes at time t_0 might have its status affected by the development of technology at t_1 . The outcome is that a transaction placed inside the firm, can be contracted outside after the technology evolves. Examples are abundant to highlight this argument. The modern bio-technology applied to the seeds industry, particularly the genetic modified organisms, faces a problem of technological piracy

since some seeds can be multiplied and used in the next season. Seed companies face problems to collect royalties that could be solved with the adoption of cheap field tests to detect the presence of the genetic modified organism, allowing the charge for use of the proprietary technology. Performance measure of trucks and ships can be traced by satellite as well as agricultural harvest services can be contracted and monitored from remote sites based on satellite signals. In both cases transaction dimensions that were difficult to measure became easy to be detected, implying that part of the transaction value could be protected.

Therefore technological development affected the costs of measurement of attributes being transacted. Courts can act to protect property rights and therefore contracts can evolve.

b) Standards are useful to reduce or eliminate the double measurement cost. Transactions are carried with lower measurement costs if standards are adopted under surveillance of some collective mechanism. Therefore standards affect how much of the transaction is carried under contract, but it depends on the existence of collective mechanisms to protect from free riders. Examples can be seen in the flower auctions in Alsemeer-Netherlands, where flowers from all over the world are traded based on well defined quality attributes standards. In this particular example the reputation mechanism that supports the transaction is also observed, since buyers know the name of the farmer selling the product in the auction. Buyers know the farmers reputation and the auction room runs out of space when a farmer with reputation capital displays his product.

c) Competences of Transactors: In addition to judges and courts competences, private agents also develop individual stock of knowledge

as well as collective organizational routines related to particular recursive transactions. This aspect is presented by Klein (1992) discussing the ability of private agents to draft contracts as related to continuous interactions. The effect is the declining complexity of formal contracts suggesting that dynamic elements are present, either related to trust, to a better knowledge of the particularities and risks of the transaction, or related to routines that enhance the knowledge of parts related to the characteristics of the transaction.

3.1. Capabilities, Routines and Measurement Costs:

Measurement cost theory is presented as one of the branches of transaction costs (Williamson,1975, Langlois 1992,p.102). The basic proposition of the theory is that easy to measure attributes of any transaction are expected to be contracted out since legal rights can be defined and enforced at low cost by courts. Otherwise difficult to measure attributes are expected to be kept inside the boundaries of the firm, since there are risks of expropriation of value, being margins exposed to value dissipation. From the theory some basic hypothesis are derived, as proposed. The most relevant are:

- Firms are defined in terms of their vertical and horizontal limits based on efficiency purposes to protect the value of attributes being exchanged.
- The more difficult to measure the attributes, the more vertical integration is expected to be observed.
- Firms are defined as a nexus of guarantees. Therefore, large firms can offer more guarantees, replacing courts.

Recent theoretical developments of the theory of the firm offer alternative explanations of the determinants of vertical integration unrelated or less dependent on asset specific investments and capture of quasi rents. Capabilities perspective offers an explanation based on production costs related to the evolution of competences and routines in the firm. Since measurement cost theory is built on the difficulties to measure the attributes and the protection of value of transaction dimensions, a relevant question to be asked is how the generation of capabilities affects the costs of measurement of a particular transaction.

No previous studies explored the connection of both theories, particularly the shifter parameter related to the theoretical predictions. We propose that the delineation of the limits between contracts and agreements is not static, but it is affected by two key factors: measurement technology and competences, being of private contracting agents or competences of courts to adjudicate. Individuals as well as courts develop competences to deal with disputes. We advance the theoretical perspective introducing the effects that shifters have in the theoretical predictions, namely; changes in the competence of courts to judge, and changes in the competences of individuals to measure attributes being transacted. This perspective introduces a dynamic aspect that can be stated as: “transactions carried inside the firm can be contracted outside if capabilities evolve that affect the competence to measure by courts and by the transacting agents.”

<insert figure 2 here>

As routines evolve the ratio A/B in figure 2 expands permitting that more contracts be drafted, with dynamic impacts on MCT predictions. The

internal organization of the judiciary system, the technology to measure and the competences of private transacting agents introduce dynamic transformations in the theory.²

4. Case of Brazilian soybean farmers v. traders

Brazil, as a civil law country, reviewed the civil code in 2001, after seven decades. Among the modifications introduced two are of particular relevance to this study. The introduction of the concept of “social role of contracts” and the concept of “sumula vinculante” . The first considers that contracts can be interpreted as weak instruments of guarantees, in cases where one part is considered affected by unexpected changes in the original contract conditions. The second intends to introduce a mandatory jurisprudence routine by connecting local court decisions to the decision of the Federal Superior Court of justice, for similar cases. The debate about both new rules is alive motivated by the impact they have on the predictability of courts decisions. The focus of the debate is that the concept of “social role contracts” potentially introduces more variability in courts decisions, while the “sumula vinculante” works in the opposite direction, speeding up the final decisions, at the cost of reducing the freedom of judges to decide.

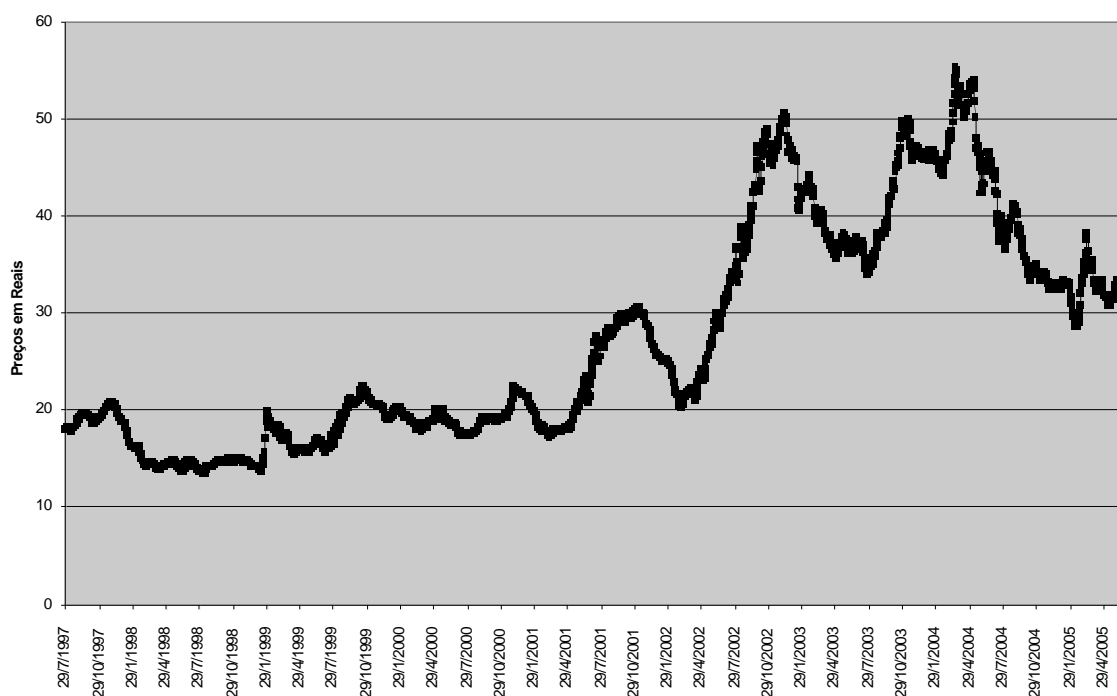
In the 90’s soybean farmers and crushers adopted a contract for future delivery of the product in exchange for credit, in cash or in form of inputs (fertilizers, and seeds). Contracts are standard and prices are based on the

² The tension of measurement cost theory and the governance alignment hypothesis proposed by Oliver Williamson is evident. This explanation does not consider the argument based on the value of transaction specific investments. The dynamic dimension proposed in this paper can be contrasted with the concept of “fundamental transformation” proposed by Williamson (1996,p.13)

future market. In cases of credit in form of cash, traders requested collaterals to guarantee the loans.

In the agriculture seasons of 2002/2003 and 2003/2004 soybean prices at the time contracts had been designed were between US\$ 10 to 12 per bushel, reaching US\$ 17 at harvest time. As a consequence many farmers decided not to deliver the product, selling in the spot market instead. Thus, traders and industries accessed the judiciary in order to guarantee their rights to receive the product.

Figure 1 Soybean prices 1995 - 2005 in Reais.



Source: CEPEA/ESALQ

Dispersion of results:

Traders expected that reputation mechanisms and the courts decisions would offer enough signals to the parties to fulfill the contract obligations. However some farmers that held contracts with fixed prices decided to breach the contract based on the interpretation of the unexpected variation in the market conditions. Farmers that received credit in cash honored the contracts since they anticipated that courts should favor the other part. In case of explicit contract penalties, some farmers decided to pay. Some farmers fulfilled contract obligations not because of courts signals, but due to reputation mechanisms. They knew that courts would take a long time to come to a final decision, but they also knew that they needed to transact with the same traders in the near future.

Following the court decisions we identified that very similar cases had different interpretations by judges. Farmers based the defense in arguments based on the “social role of contract” and the unpredictability of price fluctuation. Industries and traders argued that price variability should be expected being part of the business possibilities. They considered that contracts are designed exactly to deal with excessive variability offering more stable conditions to transact.

Among 200 judicial decisions in local courts, about 50% favored farmers based in argument of social role of contracts instead of the rigidity of “*pacta sunt servanda*” principle. They also adopted the principle of the juridical theory of imprevisibility under which judges are expected reinterpret contractual obligations to promote equity. Other judges favored the other parties considering that the fluctuations are expected among market players and also due to the relevant role of contracts to control uncertainty in transactions. The Federal Court of Appeals is starting to review the cases, with expected long term results in terms of the

jurisprudence. However this is a slow process that might take time to consolidate the judiciary decision.

Discussion: The interviews with traders show that contracts have been reduced in the years following the conflicts. Parties have chosen reputation mechanisms in substitution of formal contracts. This is aligned with the MCT predictions.

An apparently simple case of contract rupture has produced a very uneven court interpretation suggesting that the knowledge necessary to interpret is too dispersed, suggesting also those individual preferences and beliefs of judges prevailed directing the decisions. No specialized routine was identified of information technology adopted to facilitate the access to courts decisions.

Only after the federal court of justice produces more decisions on similar cases, the new civil code clause of “*sumula vinculante*” will be adopted reducing variability of decisions, offering more clear signals to parties involved in this particular transaction. Meanwhile contracts are expected to have its number reduced and more reputation based mechanisms are expected to be in place. But this is not a static equilibrium, instead it changes over time suggesting the existence of an interval of indetermination between the adoption of contracts and other mechanisms.

How fast a convergence is reached depends on the development and adoption of information technology and routines that link and connect the independent judges, facilitating the access of information dispersed in the judiciary system

5. Conclusions:

The present study aims to enlarge the theoretical scope of MCT introducing dynamic elements. Basically courts capabilities to produce decisions are related to existence of routines and technology. The paper suggests that the knowledge accessed by judges ranges from individual and unconnected production of decisions to more complex systems that organize the knowledge related to particular typology of disputes. Specialized courts and organization of jurisprudence are examples of internal organization that demand coordination and therefore is affected by the organization of knowledge. As the judicial system develops routines that make easier the access to knowledge, dispersion is expected to be reduced, the discretionary power of individual judges is expected to be controlled and the exposure to capture is expected to be controlled.

The proportion of transactions supported by contracts or other reputation means is expected to change through time. The key driver is the evolution of capabilities in the legal system. One point that deserves further analysis is the difference between common and civil law systems to deal with the evolution of capabilities. A hypothesis to be further discussed is related to the distinction in the mechanisms to produce courts decisions in both systems that might differ in terms of evolution of routines that facilitate the production of unbiased decisions. This opens room to explore differences in efficiency between alternative legal systems.

As discussed by Klein (1992), also private agents develop new contract formats. I interpret this observation using the lenses of capabilities, by introducing the evolution of joint routines, enabling parties to improve contracts and creating alternative relational mechanisms. This opens room to interpret relational contracts under the lenses of routines.

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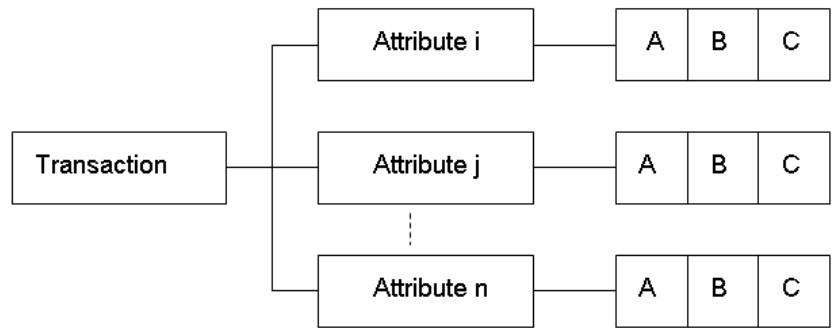
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Figure 1: Measuring Costs: contracts or agreements

Figura I – Contracts or Agreements



- A. Enforceable by courts contract
 - B. Guaranteed by private mechanisms
 - C. No guarantees are possible (vertical integration)
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Figure 2: Court Capabilities and Contracted Dimensions

Figura II – Dynamic effects of competences

