PLURAL FORMS AND INFORMATION ASYMMETRY: AN ANALYTIC PROPOSAL

Abstract

This paper highlights the inability of the existing theories in explaining the stability of plural forms over time. To this end, it presents various views of the phenomenon and intends to shed new light on the conceptual approaches devoted to understanding it. Through the proposal of a novel analytical formulation, it is sought to determine why firms both make and buy, namely by bringing together the cost of producing and that of transacting when choosing for a governance structure. It also evidences the existence of an optimal contractual mix, capable of providing the desired incentives at a minimum cost. Therefore, the implications drawn from this analysis indicate that plural forms are efficient rent appropriation devices, aimed at allowing firms to economize on both transaction and production costs, while preventing any fraud on the part of the members comprising the transaction. Because this proposal remains strictly theoretical, future studies seeking to further develop this line of investigation need to advance into the empirical assessment of the conceptual model herein presented.

Keywords: plural forms, cost of production, transaction cost, information

1. INTRODUCTION

Ronald Coase, when conceiving of the firm as a nexus of contracts in his 1937 work, highlighted the need for a theory of the firm that would model real world phenomena. With this respect, the main contribution set forth by Coase's work was that there are costs associated with the use of the price mechanism, which should be added to the Neoclassical analyses of production costs.

Following Coase's reflexion, various theoretical approaches have searched for the optimal allocation of property rights as to maximize economic efficiency and minimize the costs of transacting; such as the Transaction Cost Economics (Williamson, 1973, 1985, 1996) - TCE. This theory, thoroughly based on the Coasean legacy, has stood out principally for enabling for the generation of testable hypothesis.

The rationale to which much of TCE's success is attributed relies on Williamson's discriminating alignment hypothesis, which determines that the selection of the optimal governance structure constitutes a discrete choice among the three alternatives: vertical integration, hybrid forms or market (Williamson, 1985,1996). The hypothesis, thus, associates one single efficient governance structure for each transaction, considering its dimensions and the underlying behavioral assumptions.

Although TCE proposals have been confirmed in various empirical studies (Macher & Richman, 2006), some have demonstrated that there are deficiencies in the theoretical approach developed by Williamson (1985, 1996), principally in its capacity to explain the simultaneous adoption of two or more organizational forms in the governance of a single transaction – the so-called plural forms (Bradach & Eccles, 1989; Bradach, 1997; Heide, 2003; Parmigiani, 2007). In the face of such proposal emerges the first question to be treated in this paper: why do firms opt to structure their transactions through plural forms?

In this paper, we develop a conceptual model in order to respond to this question. To this end, our analytic proposal is based as much on the theory of the firm by Barzel (1982, 1997) as in those that originated from the agency theory to the extent that it is permitted that the choice of organizational arrangements be related to the economics in transaction costs arising from asymmetrical information.

Therefore, according to the hypothesis underlying this study, plurality would constitute an efficient strategy for income appropriation in order to proportion the incentives necessary to impede any fraud on the part of the members that comprise the organization or are related to it through transactions (Heide, 2003). Such an approach acquires an even greater significance when the costs of production are added to the traditional comparative analysis of transaction costs, in accordance with the suggestion that is implied in Demsetz's (1993) work.

Not only do we subscribe to his view, but also stress that accounting for the cost of production within the governance decision could entail a different efficient structure relative to the one revealed by the discriminating alignment hypothesis (Demsetz, 1993). This is due to the fact that acquiring the product either at the spot market or through contracts could provide firms with lower production costs than those that would be incurred by internalizing the activity. Thereby, we propose a theoretical model where plural forms would result from analyzing transaction and production costs, allowing firms to economize on both costs, while preventing any fraud on the part of the members comprising the transaction.

It is worth noting that the above-mentioned proposal inevitably raises a second question, which will also be addressed in this paper, although remaining strictly limited to a theoretical formulation: will there be an optimal contractual mix that would allow for the desired incentives at a minimum cost? The reasoning behind this question is that while excessive internalization of activities would cause elevated costs associated to the monitoring of employees, the absence of verticalization could be

insufficient to proportion the contracting firm the information necessary to impede any fraud on the part of the contracted, as foreseen by the Measurement Cost Theory (Barzel, 1982).

This paper has been structured as follows: first we present the conception of plural forms to show that they do differ relative to hybrids. Next, we expose various views of the phenomenon in order to demonstrate the inability of the existing theories in explaining their stability over time. We then attempt to advance into the understanding of plural forms by proposing a novel theoretical approach. Finally, we draw some implications and remarks.

2. AFTER ALL, WHAT ARE PLURAL FORMS?

Much of what is now taken as early transaction cost economics literature relies on the make or buy dichotomy that was introduced by Coase in 1937 and taken up by Williamson in the early 70's. It was only in the mid 80's that Williamson explicitly recognized that some transactions were neither carried out in the spot market nor were they vertically integrated - the so called hybrid forms. Thus, transactions that remained in the "middle range" were introduced into Williamson's framework in 1985 and were further conceived of by the author in 1996 as bearing intermediate levels of all the competences presented by the other two forms: market and hierarchy.

Unlike Williamson's broad and uniform conception of hybrids, Menard (2004) exposed a wide variety of organizational arrangements which neither constituted hierarchies nor could be adequately framed into the spot market. To this end, the author presented a brief chronological review of the literature regarding the study of "weird" organizational forms, which have gained more importance in the field of the organizational sciences, particularly since the 90's (Menard, 2004).

Although this literature is comprised of many distinct organizational arrangements, some of its most notorious forms include networks, franchising, cooperatives, alliances, joint ventures and so forth (Menard, 2004). Whereas all the aforementioned forms are certainly heterogeneous and bear singular characteristics, they can be grouped together because there are some empirical regularities that are recurrent in all hybrid configurations (Menard, 2004). Those regularities are due the fact that these forms rely on the distinctive allocation of property rights among partners, while keeping them as autonomous residual claimants (Menard, 2004). As a result, all hybrids are composed of the pooling of resources, of contracting and of competing (Menard, 2004, 2006, 2011).

That is, an important contribution relative to the understanding of hybrid forms that was brought by Menard's work consisted of the exposition that these forms are composed of several different contractual arrangements endowed with unique characteristics, although presenting the same empirical regularities; unlike Williamson's uniform conception. It is worth noting, however, that despite Menard's (2004) success in providing a better understanding relative to hybrid forms, both Williamson (1996) and Menard (2004, 2006) share the view that each transaction should be entirely governed by one single efficient governance structure, amongst the three discrete alternatives.

In other words, the reasoning set forth by both Williamson (1996) and Menard (2004, 2006) would allow a given transaction to be modeled though the following expression: $\alpha H + \beta X + \lambda M$, where H, X and M represent the pure forms hierarchy, hybrid and market, respectively; and α, β and λ, the coefficients relative to the percentages of each form in the composition of the transaction. Hence, it is reasonable to define $\alpha + \beta + \lambda = 1$.

Because both Williamson's (1996) and Menard's (2004) approaches solely admit pure forms, that is, propose that each transaction should be entirely governed by one single discrete form; the solutions the equation $\alpha + \beta + \lambda = 1$ are restricted to the following sets: $\{\alpha=1, \beta=0, \lambda=0\}$ or $\{\alpha=0, \beta=1, \lambda=0\}$ or $\{\alpha=0, \beta=0, \lambda=1\}$[1]. This notation implies that the solutions listed above correspond to the discrete choice of the efficient governance structure, as set forth in the discriminating alignment hypothesis developed by Williamson (1996), to which Menard (2004) also subscribes.

Unlike their views, various empirical studies have revealed the governance of a single transaction through the simultaneous use of two or more organizational forms (Monteverde & Teece, 1982; Bradach & Eccles, 1989; Bradach, 1997; Lafontaine & Slade, 1997; Heide, 2003; Jacobides & Billinger, 2006; Puranam, Gulati & Bhattacharya, 2006; Parmigiani, 2007). In fact, one of the first empirical evidences regarding this phenomenon dates back to the early 80's, when Monteverde and Teece (1982) conducted a study aimed at analyzing vertical integration decisions within the automobile industry. By conceiving of vertical integration as the in-house production of over 80% of the analyzed components, the authors implicitly recognized that such a transaction was simultaneously governed by the market and by the hierarchy, although this was definitely not their aim. After all, at that time, the logic behind the theory of the firm still relied on the dichotomy of the markets and hierarchies introduced by Coase (1937) and taken up by Williamson (1973).

[1] The set $\{\alpha=0, \beta=0, \lambda=0\}$ does not constitute a valid solution because in this case, there would be no transaction to be modeled.

Bradach & Eccles (1989) later questioned such a dichotomous conception by proposing the existence of a continuum of non-mutually exclusive organizational forms, coordinated by authority, price and trust mechanisms; between the polar modes of the market and the hierarchy. It is worth noting, however, that although this view might seem similar to that of Williamson's (1996) and Menard's (2004) relative to hybrids, an important innovation introduced by Bradach & Eccles (1989) consisted of the idea that transactions would be embedded into other transactions and into their social context. In other words, the authors introduced, for the first time, the concept of plural forms as "[…]an arrangement where distinct organizational control mechanisms are operated simultaneously for the same function by the same firm." (Bradach & Eccles, 1989: 112).

Following Bradach & Eccles (1989), various empirical studies have evidenced the existence of plural forms. For instance, Parmigiani (2007) found that companies operating in the tooling industry both made and bought metallic components, which she denominated "concurrent sourcing". This structure could be represented by the scheme depicted in figure 1, where the dotted line denotes the boundaries of firm 2 and the numbers, the position held by each agent in the supply chain.

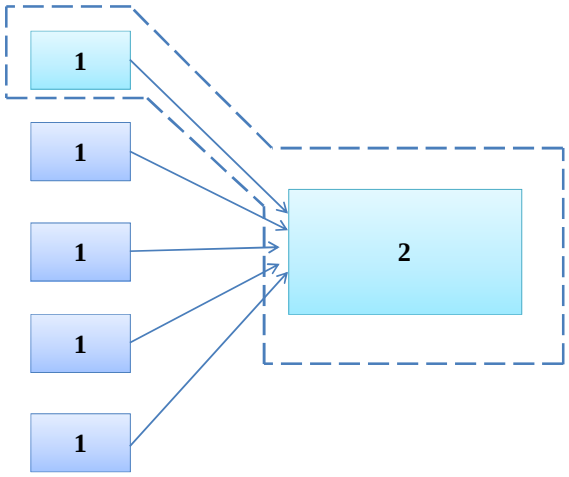

Figure 1 – Plural governance structure: sourcing

We note that firm 2 sources principally by transacting with external agents, either though contracts, or in the spot market or even though a combination of both. It is worth noting, however, that part of this sourcing is integrated, as set forth by Parmigiani (2007).

Downstream, Lafontaine (1992) and Lafontaine & Slade (1997) pointed out the coexistence of company owned and franchised outlets while Heide (2003) found the simultaneous use of the distribution channels owned by both firms and third parties. In the agribusiness scenario, Mello & Paulillo (2010) revealed that orange growers sold their product both by contracting and on the spot

market. Those structures could be represented by the scheme depicted in figure 2, where the dotted line denotes the boundaries of firm 1 and the numbers, the position held by each agent in the supply chain.

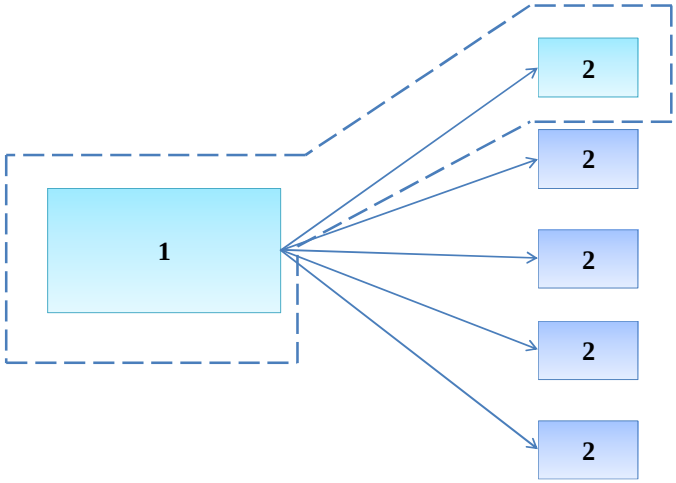

Figure 2 – Plural governance structure: distribution

We note that firm 1 distributes its product principally by transacting with external agents, either though contracts, or in the spot market or even though a combination of both. It is worth noting, however, that part of this distribution is integrated, as set forth by Lafontaine (1992), Heide (2003) and Mello & Paulillo (2010).

Hence, it is worth noting that in all the aforementioned examples, a single transaction is governed by two or more organizational forms, unlike the theoretical approaches developed in accordance with Williamson's rationale, which is limited in its capacity to provide an explanation for this real world phenomenon.

Such a restriction becomes even more significant when considering Coase's 1937 criticism to the Neoclassical models which did not reflect the realities of the markets to which they sought explanations. That is, Williamson's view (1985, 1996) is limiting because part of his explanatory power is lost by restricting the analytical scope of his framework solely to the pure organizational forms. It is worth highlighting, however, that although this restriction has already been recognized by several authors within the organizational economics literature (Jacobides & Billinger, 2006; Puranam, Gulati & Bhattacharya, 2006; Mello & Paulillo, 2010), there has been an initial resistance in admitting it. To this extent, various studies sought to frame the anomaly into TCE's guidelines, namely in three different ways, directed towards distinct aspects of the Transaction Cost Theory.

The first theoretical stream relies on the logic that plural forms do not govern a single transaction, but rather a series of similar transactions. That is, the fact that some firms acquire an input both at the market and internally would not compose a single transaction, but rather a combination of the transactions carried out in the market with those internalized. As of this argument, plural forms would be framed into the logic of TCE since each transaction would present the three dimensions specified by Williamson (1985, 1996) – asset specificity, frequency and uncertainty - in different proportions, which would explain the discrepancies observed in the selection of the efficient organizational form (Minkler & Park, 1994, Gonzales, Aruñada & Fernandez, 1999) . That is, as set forth by the first strand, plural forms would constitute a set of similar transactions, endowed with distinct attributes, which would justify grouping together different governance structures.

In seeking to eliminate this restriction and to understand plural forms as a single transaction governed simultaneously by different organizational forms, Parmigiani (2007) developed a new approach to the explanation of the phenomenon, although still restricted to the asset specificity reasoning set forth by TCE. According to this author, the concurrent sourcing of metal components would be reasonably justified by the indifference between two of Williamson's (1996) organizational forms, in view of the asset specificity involved in the transaction. That is, according to the model set forth by Parmigiani (2007), firms would pick plural forms if they were indifferent amongst two alternative organizational forms, in accordance with the model developed by Williamson (1996). Although her contribution is relevant mainly because of its understanding of plural forms as a single transaction, as opposed to the view of the first theoretical stream devoted to explaining the anomaly, one could not claim this framework free of inconsistencies.

In fact, an important restriction imposed by such a theoretical formulation consists of the possible combinations of organizational forms in the composition of the plural structure. This limitation occurs because the indifference points in Williamson's (1996) model correspond to the intersections between the curves relative to the market and to hybrid forms and between those relative to hybrid forms and to hierarchy. That is, according to Parmigiani (2007), plural forms could be composed solely of the combinations of the spot market with contracting or of vertical integration and contracting, neglecting all other combinations not included in the indifference points, or still, the simultaneous use of three organizational forms.

Even if that view did not present such restraint, this approach would be unable to justify the adoption of different percentages of each organizational form, in the composition of a given transaction; that is, Parmiggiani (2007) would not explain why some firms produce internally 80%

of the components and hire the rest while others make only 20% and carry out contracts to supply the remaining demand. This limitation is due to the artificial framing of plural forms within the logic of TCE, whose explanatory variables are appropriate with regard to pure organizational forms, but fail to provide conclusions in the context of plural forms.

In addition to the two strands discussed earlier, there is a third conceptual line of reasoning which also results into framing plural forms within TCE's guidelines. Although each author belonging to this theoretical stream presents a different argumentation relative to their peers, their expected results converge to the conclusion that plural forms are a transitory and short-term phenomenon, where a single organizational form should prevail in the long run (Caves & Murphy, 1976; Gallini & Lutz, 1992; Zylbersztajn & Nogueira, 2002).

Unlike this perception, some studies have demonstrated both empirically and through theoretical arguments that plural forms are stable over time (Bradach, 1997; Lafontaine & Shaw, 1999, 2005; Azevedo & Silva, 2001; Baker & Dunt, 2008).

It should be emphasized, therefore, that TCE is unable to provide consistent explanations for the stability of plural forms, empirically observed in the real world; either through its direct and pure application or through the artificial arrangements aimed at framing the phenomenon into its guidelines, as already discussed (Minkler & Park, 1994; Gonzales, Aruñada & Fernández, 1999; Parmigiani, 2007; Caves & Murphy, 1976, Gallini & Lutz, 1992; Zylbersztajn & Nogueira, 2002).

In the face of such a fact, some contemporary authors have sought to understand this phenomenon from the perspective of the firm's strategy, (Michael, 2000; Heide, 2003; Penard, Raynaud & Saussier, 2005; Jacobides & Billinger, 2006; Puranam, Gulati & Bhattacharya, 2006; He & Nickerson, 2006), although this theoretical literature has not yet reached a consensus on the reasons associated with the simultaneous adoption of multiple governance structures, both upstream and downstream.

Given this restriction and the absence of a consensus in the literature devoted to understanding the plural forms, this paper intends to shed new light on the shy theoretical approach that is available with respect to the phenomenon, by presenting a new conceptual approach. To this end, conceptualizing plural forms in accordance with the notation that will be used in this study becomes appropriate, as we shall see below.

As set forth in the discussion presented at the beginning of this article, because both Williamson's (1996) and Menard's (2004) approaches solely admit pure forms, that is, propose that each transaction should be entirely governed by one single discrete form; the solutions the equation $\alpha + \beta + \lambda = 1$, where α, β and λ represent the percentages of each pure form hierarchy, hybrid and market- H, X, M- in the composition of the transaction $\alpha H + \beta X + \lambda M$, are restricted to the following sets: $\{\alpha=1, \beta=0, \lambda=0\}$ or $\{\alpha=0, \beta=1, \lambda=0\}$ or $\{\alpha=0, \beta=0, \lambda=1\}$. This notation implies that the solutions listed above correspond to the discrete choice of the efficient governance structure, as set forth in the discriminating alignment hypothesis developed by Williamson (1996), to which Menard (2004) also subscribes.

Unlike this perspective, we propose that the choice of the governance structure is not discrete, but rather, continuous. In other words, the framework herein developed will be based on the assumption that the equation $\alpha + \beta + \lambda = 1$ could admit any solution[2] comprised of the combinations of α, β and λ, as long as $\{\alpha, \beta \text{ and } \lambda \in \mathbb{R}_+\}$.

As a matter of parsimony, the scope of this work will be restricted to a logic very similar to that of the dichotomous decision introduced by Coase (1937) amongst producing in the marketplace or within the firm, which was later taken up in Williamson's conception of "markets and hierarchies" (Williamson, 1973, 1975). Although the notion that such a classification might not be the most appropriate one has already been widely incorporated into the literature, the research object of this work lies precisely in determining the components of the transaction that will be integrated or will be obtained outside the firm[3]. Thus, the sum of the coefficients associated with the hybrid forms and the market - $\lambda + \beta$ - will be denoted by $1- \alpha$, where α will be referred to as "vertical integration degree".

It should be emphasized, however, that this model does not contradict the results laid down by the discrete form, widely acknowledged in the literature, but rather, constitutes a generalization of that notion. In other words, it is by no means our intention to contradict the logic of the discriminating alignment hypothesis, but to develop a more generic alternative to the discrete choice among alternative governance structures. In fact, our conceptual proposition does approach Williamson's rationale in the sense that it admits the existence of an optimal structure, in view of the competences and the costs associated with each organizational form.

[2] Except for the set $\{\alpha=0, \beta=0, \lambda=0\}$.

[3] That is, we propose an approach in which both the pure market form and the hybrids, or still a combination of both governance structures are grouped into a single category, to the extent that in these cases, the production occurs outside the hierarchical scope, although it is not the intention of this study to question the different characteristics underlying each of these organizational forms.

As we shall discuss next, the theoretical approach developed in this study will be based on the reasoning introduced by Demsetz's (1993) work, which emphasizes that analyzing the information cost plays a major role when choosing the allocation of production among economic agents. As of this conception, both Barzel's (1982, 1997, 2001) work and those derived from the agency theory will be used in support of the thesis that the simultaneous adoption of multiple governance structures mitigates information asymmetries among parties, at a minimum cost.

3. ADDING THE COSTS OF PRODUCING AND NEGOTIATING

Although "TCE is an empirical success story" (Williamson, 2000:605), such a theoretical formulation has been widely debated in several studies with respect to various distinct aspects of Williamson's (1985) governance approach[4].

Demsetz (1993), in criticizing the neo institutional approaches aimed at justifying the boundaries of the firm, suggests that these views tend to disregard production costs[5]; that is, Demsetz (1993) proposes that the approaches based on Williamson's rationale take to an extreme the view that the boundaries of the firm are shaped by the analysis of transaction costs, disregarding the gains that are brought by joint production[6].

As Demsetz (1993) points out, the definition of the Coasean firm based on the contradistinction of transaction costs with the marginal cost loses analytical power by observing only the logic of the organizational strategy from the perspective of transaction costs. That is, for the author, the rationale introduced by Coase (1937) that profit maximization (efficiency) requires the institution of the firm rather than the market if the cost of using the market becomes relatively higher than the cost running the hierarchy is actually incomplete.

According to the author, such contradistinction implicitly assumes that all firms would present identical costs of production, being perfectly substitutable amongst themselves or for the market.

[4]Some of these inquiries concern the behavioral assumptions, such as in the works of Granovetter (1985), Ghoshal & Moran (1996) and Demsetz (1993). Others relate to its static and short-term view, as evidenced by Langlois (1992) or even to the operational limitations exposed by Barzel (2002), among others.

[5]Although Williamson himself (1991) recognized the importance of considering production costs in the governance decision, his approach remained absolutely restricted to the analysis of transaction costs.

[6]Williamson (1999, p.1103), in Strategy research: governance and competence perspectives, recognizes the limitis of his theory "'What is the best generic mode (market, hybrid, firm, or bureau) to organize X?', which is the traditional transaction cost query, the question to be put instead is 'How should firm A-which has pre-existing strengths and weaknesses (core competences and disabilities)-organize X?'"

That is, it is assumed that the production of each firm could be perfectly replicated by others, and as a result, make or buy decisions would be made regardless of the differences in production costs. For this reason, Demsetz (1993) states that TCE implicitly assumes that firms would be homogenous[7] and under stimulated to search for differentiating attributes.

That is, Demsetz (1993) argues that the issue introduced by Coase (1937) and taken up to the extreme in most theories of the firm based on Williamson's rationale should instead be based on the comparison of the sums of transaction costs and the administration cost of both the firm and the market. In this respect, Demsetz (1993) states that adding the cost of producing to the key variables that make up TCE's analytical framework could yield results that differ from those predicted by the pure coasean/williamsonian logic.

In other words, Demsetz (1993) argues that the predictive power of most theories that are based on the coasean/williamsonian approach is limited both due to focusing exclusively on transaction costs and by the implicit assumption that firms and markets would be perfectly substitutable. As set forth by Demsetz (1993), although transaction costs do exert significant influence in shaping the organization of production, they do not constitute the key variable in such scenario, which should also account for the production cost. Instead, Demsetz (1993) proposes that central to the economic organization problem is the analysis of information costs, important components of both the cost of transacting and of the internal organization.

Barzel (1997, 2001) retrieves Demsetz's (1993) view by proposing the Measurement Cost Thoery to the extent that measurement constitutes the quantification of information relative to the agreement reached by the parties involved in the transaction.

In fact, the theory of the firm, as defined by Barzel (1997, 2001), is based primarily on the information that is available in order to protect property rights and to prevent the capture of value. According to this author, perfectly delineating property rights depends upon the disclosure of full information regarding all the attributes that are endowed with some value, both by its proprietor and by others. In the real world, however, obtaining information is not costless: high information costs yield transaction costs, which in turn, are associated with the protection and transfer of property rights (Barzel, 1997, 2005).

[7] Although Demsetz's (1993) criticism to TCE relates primarily to production costs, other authors based on Knight's (1921) rationale, such as Foss (2004, 2007) and Klein (2007), tend to agree with this view. Other authors, such as Peteraf (1993) subscribe to such criticism because they are based on the logic of the Resource-Based View - RBV, according to which the development of differentiated resources among firms underlies the existence of competitive advantage, though not necessarily related solely to production costs.

Positive transaction costs hamper a comprehensive definition of property rights among the parties involved in a transaction because some of the asset attributes present high measurement costs relative to their value (Barzel, 1982, 1997). As a result, some of those attributes are never fully known by its current or potential owners, who in turn, would incur significant expenses in seeking for the most relevant ones in order to appropriate their value.

As set forth by Barzel (1997), because transaction costs could become prohibitively high, property rights would remain ill-defined. The author furthers this view by proposing that the harder it is to gather precise and complete information relative to the variability to which the transacted attributes are subject, the more difficult it will be to properly define property rights.

As noted earlier, high measurement costs relative to some or to all the asset attributes may imply in value capture within the transaction. It is worth noting that this scenario would be equivalent to placing either the asset itself or some of its attributes in the public domain (Barzel, 1997); that is, firms incur losses arising from their engagement in activities aimed to capture and protect value.

Moreover, it should be highlighted that the need to measure transacted attributes arises as a means of hindering the capture of value on behalf of the other party within the transaction. For this reason, Barzel (1997) recommends that only those transactions whose attributes can be easily measured be carried out in the marketplace; while others, endowed with high measurement costs, should be vertically integrated.

In other words, the internalization of some transactions could be justified by the difficulty in monitoring and controlling the contracted party's actions, which could lead it into cheating or capturing value, in the face of ill-defined property rights. It is worth noting that although internalizing activities might provide firms with lower measurement costs while hindering any possibility of cheating on behalf its partners, as set forth by the Measurement Cost Theory, it also gives rise to other costs aimed at promoting cooperation among the employees comprising the hierarchy.

That is, while vertically integrating might reduce those costs associated with inducing cooperation among the contracted parties, it also gives rise to other costs associated with the establishment of

organizational practices destined to withhold shirking and value capture on behalf of the employees comprising it, in accordance with the agency literature[8].

As Eggertsson (1990) points out, an agency relationship occurs when the principal delegates some rights, such as those associated with the use of a resource, to an agent who represents his interests for a fee. This matter acquires an even greater relevance in the context of the internal organization of the firm due to the separation of ownership and control set forth by Berle and Means back in 1932. According to the authors, such segregation would accrue a conflict of interest among company owners and the managers representing them, who in turn could be induced into making decisions that would satisfy their personal desires instead of those of company owners.

This issue occurs because there are information asymmetries in agency relationships, since agents generally posses more information relative to the details of the tasks they perform than principals do. In view of this assumption, Alchian and Demsetz (1972) expose the difficulty in measuring each employee's individual contribution to the teamwork that is characteristic in economic organizations. Therefore, they highlight the need for a monitor. Eggertsson (1990) subscribes to this view and adds that the difficulty in measuring teamwork might induce employees to behave opportunistically[9].

That is why Demsetz (1983) highlights that the monitoring costs aimed at reducing information asymmetries among company owners and managers could, in turn, allow the members comprising the organization to capture its residual value. As he points out, this capture could occur through various kinds of shirking: employees could reduce their efforts; or make decisions in view of their own desires instead of those of the entire organization; or even incur in non-negotiated on the job amenities (Demsetz, 1983, 1997).

As we see next, in this paper we assume that the cost associated with monitoring employees and with providing them with incentives aimed to attenuate the agency issue becomes significantly higher as companies bear more employees[10]. The same could be inferred with regard to companies that are more geographically dispersed. Next, we shall present a conceptual approach to the choice of a plural structure based on the theoretical discussion presented above.

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[8] This literature also constitutes a branch of Transaction Cost Economics, mainly the positive approach to the agency issue, which relates to information and monitoring costs (Eggertsson, 1990).

[9] Ghoshal and Moran (1996) present a critique relative to TCE's behavioral assumption of opportunism alleging that it refers solely to the dimension that takes place outside the organization; i.e., TCE does not account for opportunism with respect to the members comprising the hierarchy. Demsetz (1993) also implies a similar criticism.

[10] If each employee's individual contribution is hard to measure, as set forth by Alchian and Demsetz (1972). Such difficulty depends on the nature of the tasks the employee performs.

4. PROPOSAL OF A CONCEPTUAL APPROACH TO PLURAL FORMS

In this section, we propose a theoretical decision model didactically segmented into two stages. In the first step, the firm decides whether to structure the transaction through plural forms; whereas in the second, it determines the optimal degree of vertical integration (α) within the plural structure. The scheme depicted in figure 3 represents both decisions.

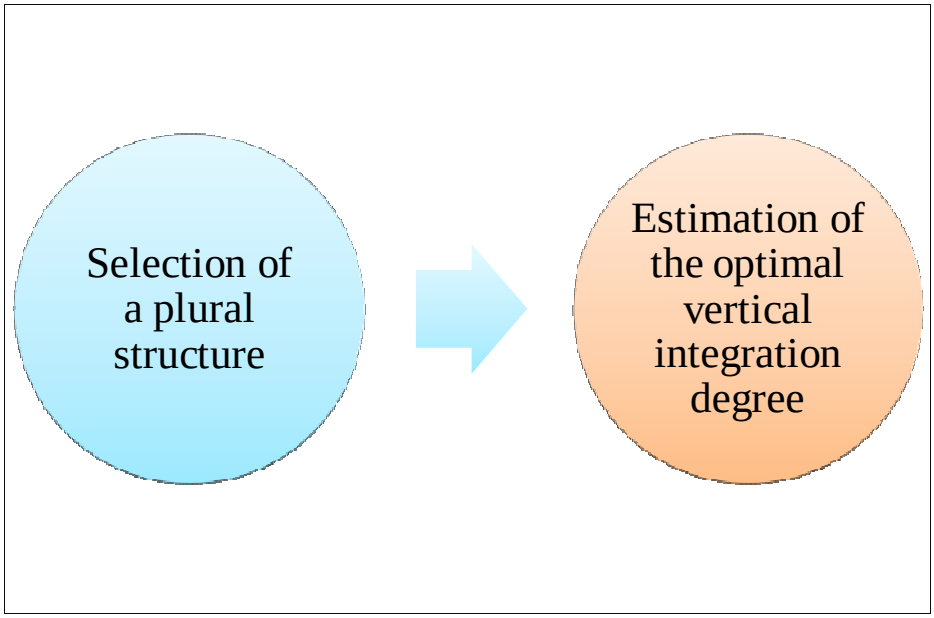

Figure 3 – Two stage decision model

To begin with, suppose that a firm is faced with the initial decision to produce internally or to acquire the product at the marketplace. The decision to purchase could be determined by a comparative analysis of the cost of producing relative to that of buying: if the internal production yields a higher cost compared to that offered by others, it would be reasonable to assume that the firm would decide to get the product from the market; all other things being equal.

It is worth noting that in order to carry out the comparative analysis presented earlier, it is necessary to have previously established the desired production volume; i.e. the first step should begin with defining the targeted production scale, and then by the comparative analysis of the production cost. In addition to that comparison, the firm still needs to undertake a second type of cost analysis in the first stage: that relative to measurement costs. These costs, in particular, become significantly relevant when dealing with differentiated[11] products.

[11] Product differentiation can be horizontal, comprising for example, variation in hard to measure quality attributes, or vertical, where the brand is a sign of product differentiation. According to Barzel (2000, 2004), all products present some degree of horizontal differentiation, to the extent that its attributes vary. However, standardized commodities tend to present very similar attributes, approaching them to the perfectly competitive market. Thus, measurement costs are

The second analysis, therefore, should assume constant the cost of production and be carried out in accordance with the propositions set forth by Barzel (1982, 1997, 2000, 2001, 2004, 2005), who suggests vertically integrating the transaction if measurement costs are too high.

Although both the analyses conducted in the first stage might seem relatively unrelated because each of them assumes constant the other cost category, they are in fact very related since high measurement costs would prevent firms from taking advantage of the lower costs of production offered at the market.

As of the discussion presented in the previous section, high measurement costs hamper the definition of property rights, yielding losses to the firm seeking for value protection, since the contracted party may pursue to appropriate it. One of the consequences of this pursuit is that high measurement costs favor cheating on behalf of the contracted parties. For this reason, Barzel (1982, 1997) suggests vertically integrating the transaction should the measurement cost be too high.

Therefore, by integrating part of its production, the firm would acquire information as to reduce measurement costs and induce the other part to behave in accordance with their initial agreement. Hence, vertically integrating part of their production would allow firms to benefit from the lower cost of production offered at the marketplace, even when measurement costs are too high to allow them to do so in the absence of monitoring. That is, plural forms would allow firms to obtain the cost advantages available at the market, even when the pure form presents high measurement costs.

Thus, we propose that the option for a plural form would be triggered by the combination of the lower production cost available at the marketplace with high measurement costs; providing those transactions with a more efficient governance alternative with respect to production and transaction costs. Figure 4, presented below, depicts a schematic summary of the first stage of our conceptual model, in which the decision for a plural form takes place.

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positive and significant when the degree of horizontal product differentiation is high enough to cause significant variations in the quality and price of goods, or when there is vertical product differentiation.

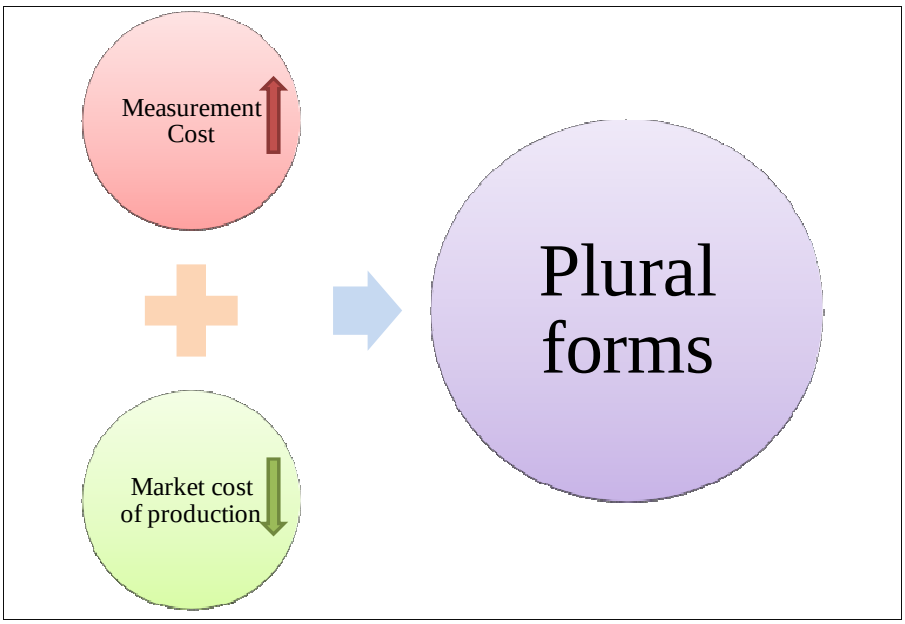

Figure 4 – First stage of the decision model: choice of a plural form

Following the decision to carry out the transaction through plural forms, it is necessary to determine the degree of vertical integration that should be adopted within the plurality. Thus, in the second stage of our model, we propose a rationale aimed at providing an answer to the inquiry as of what percentage of the transaction should be internalized versus purchased.

As noted earlier, information asymmetries give rise both to internal and external monitoring costs; relating respectively to agency and measurement costs. We propose that the degree of vertical integration within plural forms should be determined by the relationship between those two costs: the higher the costs associated with monitoring the employees and managers comprising the organization relative to that of monitoring the contracted party, the less vertically integrated the firm should be.

On the other hand, a low vertical integration degree could be insufficient to proportion the contracting firm the information necessary to impede fraud on the part of the contracted, as foreseen by the Measurement Cost Theory (Barzel, 1982). In other words, there is a tradeoff between measurement and agency costs within plural forms: whereas high agency costs relative to those of measurement imply vertical disintegration, high measurement costs relative to agency costs would evoke a higher probability to vertically integrate.

Figure 5 depicts the aforementioned tradeoff between measurement and agency costs when defining the vertical integration degree within the plural form. It also shows a third curve, relative to the sum of both costs, which will be referred to as the total transaction cost.

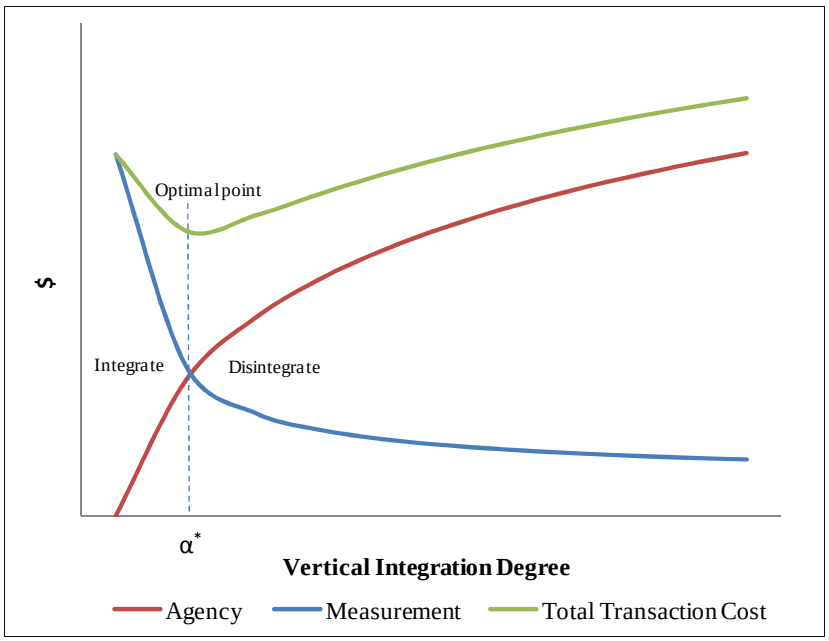

Figure 5 – Second stage of the decision model: vertical integration degree and transaction costs

With reference to figure 5, it is worth highlighting that in this case, the vertical integration degree relative to the intersection between the agency and measurement cost curves also corresponds to that yielding the minimum total transaction cost[12]. This finding suggests that such a vertical integration degree would actually constitute and optimal solution, enabling for the economics of both transaction costs.

The figure also suggests that firms would tend to format their transactions as to frame them within the optimal vertical integration degree since firms that are at the right side of α^* would be too integrated, whereas those at its left side would need to further vertically integrate. That is, distancing the vertical integration degree from the optimal one would not provide firms with transaction cost advantages, since unilateral economies in measurement costs would be insufficient to cover additional agency costs and vice versa.

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[12] As of the graphical representation, set measurement costs (MC) to MC = $\frac{1}{\ln(\alpha)}$, agency costs (AC) to AC = $\ln(\alpha)$ and the total transaction cost (TTC) to TTC= MC+ AC = $\frac{1}{\ln(\alpha)} + \ln(\alpha)$.
The minimal point of the TTC curve is $\frac{\partial TTC}{\partial \alpha} = \frac{(\ln(\alpha)-1)(\ln(\alpha)+1)}{\alpha \ln^2(\alpha)}$, whose roots are: $\alpha = e \vee \alpha = \frac{1}{e}$. At the intersection of both MC and AC: MC=AC= $\ln(\alpha) = \frac{1}{\ln(\alpha)}$; whose roots are: $\alpha = e \vee \alpha = \frac{1}{e}$. Therefore, the minimum point relative to the TTC curve corresponds to the point where MC=AC, for MC, AC and TTC given earlier. We note that such a result is valid in this case and does not necessarily hold for other curves. Therefore, we hypothesize that a full set of variables would determine the parameters of those cost curves, resulting in horizontal and vertical shifts of the optimal solution.

In view of the argumentation presented in this section and of the results associated with both stages of our decision model, it would be reasonable to assume that firms should establish their plural organizational arrangements in considering the relationships between production, measurement and agency costs. Thus, plural forms would allow firms to economize on production and transaction costs (measurement and agency) and, therefore, provide them with a more cost efficient governance structure, capable of maximizing their income appropriation.

5. FINAL REMARKS

In this theoretical paper, we highlighted the inability of the existing theories in explaining the stability of plural forms over time. First, we showed that just as the initial conception of "markets and hierarchies" has been further developed in order to account for the wide variety of contractual arrangements that remained in the "middle range", existing theories need to be complemented as to account for plural forms. In this respect, not only did we seek to stress their differences relative to hybrids but also, to present the various views of the phenomenon, in addition to the one derived from our own understanding.

As noted earlier, in view of the poor theoretical formulation devoted to understanding the plural forms, we proposed an analytical conceptual model aimed to explain why firms both make and buy, as opposed to the traditional make or buy paradigm. Our conceptual propositions were built on Demsetz's (1993) work and sought to bring the cost of production into the transaction cost framework. The model herein discussed also accounted for the information costs arising from monitoring both contracted parties and the members comprising the organization; suggesting the existence of an optimal vertical integration degree. Such a governance structure would provide firms with a more cost efficient alternative relative to the pure organizational forms, and therefore, allow them to enhance their income appropriation.

Although this paper has shed new light on the theoretical understanding of plural forms, a crucial aspect in this respect still remained unexplored: that of empirically testing our implications. As Williamson himself (2000: 607) pointed out, because "[…]good theories are rarely fully developed at the outset, the theory and the evidence are often interactive." Therefore, future studies seeking to further develop this line of investigation need to advance particularly into the empirical assessment our conceptual model, as to give rise to a more comprehensive theory devoted to analyzing the plural forms and enhance the interactions between the novel theories and their evidences. More

specifically, we would suggest testing our conceptual approach upstream, especially with regard to credence goods; as opposed to the broad literature devoted to franchising. Regardless of the path yet to be trailed, the discussion herein presented constituted an initial attempt to further advance the existing theories of the firm into the field of plural forms.

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