# THE THEORIES OF INCOMPLETE CONTRACTS IN ANALYZING THE COMPANY

**Pacala Anca**
***University of Oradea Faculty of Economic Sciences***

*Incomplete contracts theories have developed significantly in recent decades, although insistence for rigorous models left little room for empirical research. By formalizing and extending some results from other theories such as transaction costs, incomplete contracts theory tries to analyze the prudence displayed by the parties before the possible opportunistic behavior that would follow completing a contract, especially in the case of specific investments and how the insufficient contractual protection measures can lead to inefficient levels of investment. Even the name - incomplete contracts theory- suggests that the main concern is to consider the limits of contracts, that the contracts fail to specify not only the investment ex ante, but also many other unforeseen items that may appear ex post, and that would be desirable to be introduced in such an arrangement. Explanations can be either the bounded rationality or excessive cost that would involve writing of such contracts.*
*This paper is part of the doctoral thesis on Integrate perspective on companies sector, coordinated by professor Ph.D. Alina Bădulescu from University of Oradea, Faculty of Economics.*

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## Introduction

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According to the promoters of theory, these approaches start from the idea that the company operates through contracts, which are often incomplete. Thus, for various reasons, not all situations, whether expected or not, may be covered by contracts, including ownership of assets or authority within the firm. Thus, within the company, two types of rights may be identified: specific rights and residual rights - the latter referring to the generic rights on making decisions as regards production in circumstances not specified in contracts. According to this approach, the choice between contracting and internal organization is reduced to the efficient allocation of residual rights of control when contracts are incomplete and assets have a high degree of specificity (Draghici 2008).

The opinions of Coase (1937) and Simon (1951) on the fact that the essence of a company is given by the existence of an employment contract and of the authority that derives from it are also coterminous with the theory of incomplete contracts (Foss, Lando, Thomsen 1999), as they emphasize the need to take into account both the costs of entering a contract and the consequent need to adapt to changing conditions not mentioned in the contract. One could also find elements of the theory of incomplete contracts in the works of Williamson and Grossman and Hart, though they mainly focus on the negotiation power that gives ownership over assets in settling unforeseen circumstances not covered by contracts.

## 2. The theory of firm authority. The employer - employee relationship

According to Coase and Simon, the characteristic element of the company is the contract of employment, the size and limits of a firm being essentially determined by the number of

employees and the quality of contracts. The difference between an employee and an independent contractor is given the very nature of the contract that ties them to the firm: while the employee is subject to the authority of the business manager, an independent contractor acts independently. Coase emphasizes the advantage of an employment contract as it legitimates the hierarchical relationship and the acceptance of authority and therefore leads to saving transaction costs and chiefly the costs of negotiating situations that go beyond the fixed terms of contract. The disadvantage of such a contract lies in the fact that the hierarchical relationship is often overwhelmed by information and, as the company develops, the manager will probably find it very difficult to organize and manage effectively the actions of all employees subject to his/her authority because she/he will be unable to gather and process the information that is really relevant. The conclusion derived from the situation presented above is that an optimal size of the company should be established, so that it can function effectively.

Simon goes deeper in discussing employee-employer relations and tries to analyze their efficiency by comparing them with a contract set between two independent parts. The typical contract of external labor conscriptions specifies the actions to be achieve in the future, the time course and prices of labor conscriptions, while the employment contract provides for a number of requirements of employers, acceptable for employees, establishes the rights of employers and, concurrently, the obligation of the employee to accept tasks to be completed in the established period of time. Discussing the two types of contracts, Simon shows that, for a company, the advantage of the employment contract lies in its flexibility, as an employee's performance may be adapted to any situation that might appear in the development of work tasks. Obviously the advantages and benefits of an employment contract are greater as it ensures the flexibility to deal with situations of uncertainty in the activity of the company. On the other hand, Simon points out that, in the employment relationship, employment is based, to some extent, on the reputation of the employer that ensures he/she would not abuse his-her authority (the so-called need to trust the employer).

Simon's theory was criticized by Williamson (1975) for it compares the flexibility of a short-term employment contract with the rigidity of a long-term production contract (e.g. subcontracting), although at least in theory, the flexibility of a production contract could be also ensured by a series of short-term contracts.

A modern formulation given by Wernerfelt goes beyond some of the objections that may be raised against the theory of the company as formulated by Simon. Wernerfelt sees governance mechanisms as institutional mechanisms (*games forms*), depending on which players adapt to environmental changes and exchange information on these changes. His conclusion is that different forms of the game will be characterized by different levels of adjustment costs. For example, if there is a hierarchy, the employer and the employee avoid the costs of negotiating a complex employment contract, or of a series of short-term contracts, by means of a general wage agreement, in which authority is simply implicit. Thus, for a stipulated financial reward, the employer has the right to require the employee when and what to do. This kind of game has a reduced negotiation component, in comparison with other forms of games on the market, the employment relationship being thus a form of a game in which the parties decide to act jointly, in order to save the costs of communication and adaptation. Again, the agreement to enter this mechanism that is less expensive is based on information regarding the reputation of the parties (in order to avoid abuse of authority from the company, and, respectively, the employee's willingness to comply). As put forward by the theories of Coase (1937), the size of the firm is limited by the capacity of the authority to manage an excessive amount of information.

## 3. The theory of transaction costs, between Ronald Coase and Oliver Williamson

The model of transaction costs proposes institutions (companies), not markets, as possible forms of organizing and coordinating economic activities. Thus, when for obtaining a good or a service,

the external transaction costs of the company are higher than the domestic ones, there are reasons for the emergence and development of the firm. Conversely, if the external transaction costs will be lower than internal costs (the transaction) of the firm, then the size of the firm will reduce and it will resort to outsourcing operations.

According to Ronald Coase, firms are ways of organizing production when, due to imperfect information, transaction costs of coordinating production through market exchange are higher than the cost achieved in the company (Coase 1937).

Through his work, *The Nature of the Firm*, published in 1937, Ronald Coase imposes the theory of transaction costs as an attempt to define - in neoclassical terms - the relationship between firms and the market. Coase's affiliation to neoclassicism is revealed by the very explanation of the way companies function in accordance to *constant returns to scale*, and less by *increasing returns to scale (*Archibald 1987*)*. Another reason for this membership is the definition of the company in a manner that is both realistic and compatible with the idea of marginal substitution, thus allowing the application of conventional economic analysis tools.

Coase argued that the company cannot control interactions with the market (e.g., because of taxes or other sale conditions), but instead it can control certain internal processes such as, for example, the internal allocation of resources. Thus, Coase shows that "within the company [...] market transactions are eliminated and the place of the complicated market structure, marked by exchange activities, is taken by the entrepreneur, who is leading the production activity."(Coase 1987). Starting here, the question that arises is why alternative methods to the market, such as for example internal price setting mechanism or mechanisms of economic planning, do not capture economic production activity, so that either all firms use only domestic prices for their entire production or economy would actually be one huge company, in which all economic activity is concentrated.

First, Coase admits that, at least in theory, markets could perform all productive economic activities, and what should be explained is the existence of the company as a defining element of the process of suppressing the mechanism of pricing. For this reason, Coase disagrees with previous explanations regarding the emergence of firms, indicating some counter-arguments:

1. Some people prefer to work under the leadership of others and are willing to pay for this "privilege" (but this is very unlikely);
2. Some people prefer to lead others, and are prepared to pay for this "privilege" (however, in most cases, people are paid more if they have such coordinating functions);
3. Buyers prefer goods produced by firms.

For Coase, the main reason for establishing and for the existence of a firm is that of avoiding some transaction costs associated with the use of the pricing mechanism on the market. These costs include the cost of finding the relevant price (cost that may be reduced but not eliminated, by acquiring this information from specialists), costs of negotiating and drafting executing contracts for each transaction (often these contracts can lead to increased costs, depending on the size of uncertainty). Moreover, in an uncertain world, contracts will be necessarily incomplete and therefore must be frequently re-negotiated. We add to these the (often significant) costs of negotiating a possible profit for activity, particularly in the case of asymmetric information and assets specificity.

However, one should also point out that this approach is problematic, for example, a firm, even if it internalizes a large part of its market activities, will have to manage with an extremely large number of contracts, for every action it undertakes, regardless of its size or significance. In fact, companies manage to solve this problem by signing a much limited (but more complex) number of employment or management contracts, which define the leadership attributes of a manager in relation to the staff, and establish a higher salary for this activity. Obviously, these types of contracts are also written in and for situations of uncertainty, which tend to last for relatively long periods of time (years). This situation contradicts the neoclassical theory, which considers market

action as being almost "instant" and does not allow the development of a long term relationship of the principal-agent type, or planning and trust-based relationships. Coase concludes that "a firm will more often appear in those situations where the preparation of a short term contract is unreasonable and that" it seems unlikely for a firm to appear when uncertainty does not exist"(Coase 1937).

He noticed that government measures referring to the market (sales taxes, rationalization, control of prices) tend to increase the size of firms, because within these firms transaction costs are eliminated. Thus, Coase defines the firm as a "system of relationships that occurs when resource allocation and coordination depends on an entrepreneur."(Coase 1937).

According to this theory, the rationale to perform operations on the market at lower costs than the ones practiced on the market leads to the establishment of the firm size between two limits:

-A minimum size, when the company's costs are very close to exceeding the market costs (in other words, if the costs of the firm exceed market costs, it makes no sense for the company to enter the market, so it does not exist);

-A maximum size determined by the rising costs to the point where further internalization of action is equal to the cost of their obtaining (trading) on the market.

In practice, it is found that reducing payments and incentives to the management team can contribute in a much more rapid and consistent manner to the increase of costs for organizing large firms, particularly in large corporations operating on international markets, with production achievement in different countries etc., or, more obviously, in the case of conglomerates, where there is virtually no economic or functional connection between many activities. Here, the rationalization of internal transactions, the management of rapid changes in market prices is becoming more and more a management problem. The poor reward or stimulation of this managerial activity may rapidly lead to corporate failure or its resize, including through the externalization of some assets based on superficial analyzes of costs.

Coase concludes by saying that firm size depends on the costs of using the price mechanism, and on organizational costs resulting from the work of other entrepreneurs. These two factors together determine the range and volume of a company's production (Coase 1987). "The more transactions the entrepreneur organizes, the higher the chances for these transactions to be different in type or develop in different places. This would be another reason for which, as the firm extends; its efficiency might tend to decrease. Interventions aimed at bringing closer production factors, by diminishing the spatial distribution, would act in the opposite direction, favoring the expansion of the firm. (...) We might say that all the changes that improve the managerial technique have the same effect" (Coase 1937).

According to Williamson, the transaction cost theory was developed in order to facilitate the analysis of "comparative costs of planning, adapting, and monitoring within alternative governance structures"(Williamson 1985). The analysis unit in the theory of transaction costs is the transaction, which occurs when some good or service is transferred across a technologically separate interface. Transaction costs arise both in *ex-ante* situations (drafting, negotiation, protection of agreements between the parties in the transaction), but also for *ex-post* reasons (mismatch of interests, challenges, launching and operating costs, costs of commitment, etc..).

Policy makers need to evaluate the production and transaction costs associated with a transaction within their firms (*insourcing*) in relation to production and transaction costs associated with the same transaction on the market (*outsourcing*). If market transactions are chosen, then the most appropriate contract should be decided upon.

Williamson (1985) argues that there are two human factors and three environmental factors that lead to the development and manifestation of transaction costs (Williamson 1985).

The two human factors are:

1. Limited rationality: It is unlikely that people involved in making a certain decision might have the skills or resources to consider every implication that might result from future transactions.
2. Opportunism: People following in their work their own interest.

The three environmental factors are:

1. Uncertainty: uncertainty enhances the problems that occur because of limited rationality and opportunism.
2. A small number of transactions: If in a market there is only a small number of players, a participant in a transaction may have difficulties in disciplining the other party, invoking removal and searching other partners on the market.
3. Asset specificity: the value of an asset may be subject to a transaction that it facilitates. The party that has invested in the respective asset will incur a loss if the other side, which has not invested, withdraws from the transaction. Opportunity (threat) on the part of those who are acting opportunistically leads to the so-called "hold-up" problem Williamson argues that the three dimensions of a transaction affecting the type of governance structure chosen are: asset specificity, uncertainty, and frequency. As asset specificity and uncertainty increase, the risk of opportunism also increases. Thus, decision makers are more inclined to choose a hierarchical governance structure (i.e. a company). As the frequency increases, the comparative advantages of using market structures will decrease, as a hierarchical structure of governance costs can be amortized in several stages of a transaction, but also through several transactions (Klein 2009).

**Table no. 1 Correlation between the determinants of governance structure, the concept of O. Wiliamson**

| | | Uncertainty | | |
|---|---|---|---|---|
| | | Low | Medium | High |
| Assets specificity | Low | Market transactions | Market transactions | Market transactions |
| | Medium | Contract | Contract or vertical integration | Contract or vertical integration |
| | High | Contract | Contract or vertical integration | Vertical integration |

Source: Klein, P. G., (2009), Transaction Cost Economics, Univ. of Missouri and Copenhagen Business School

According to Peter Klein, Williamson's ambitions on the theory of transaction costs exceed the boundaries of an explanatory model of vertical integration conditions of economic activities, "it aiming to be a widely held, integrative, unifying view on economic organizations, going as far as considering transaction costs theory as an explanation for everything "( Klein 2009).

Any problem that might be represented, either directly or indirectly, as a problem that involves the existence of a contract may be efficiently analyzed in the terms of transaction costs" (Williamson 1985)

**4. The company as property rights (the Hart-Grossman-Moore model)**

Oliver Hart, John Moore and others developed the theory of "incomplete contracts" or of "property rights"(Grossman, Hart 1986), based on elements of Williamson's work, also in (Hart and Moore 1990), or (Hart 1995). As in Williamson, a central hypothesis of this theory is that, because of transaction costs and / or limited rationality, contracts have to be incomplete, meaning that the allocation of control rights cannot be specified for all future situations. Theory defines ownership as the possession of residual control rights, i.e. the right to use assets in unexpected situations or in contingencies not specified in the contract. Therefore, the allocation of formal property rights will affect the behavior and resource allocation.

The Grossman-Hart-Moore theory defines an enterprise as a set of jointly held assets. The basic distinction between an independent contractor and an employee, or the relationships created within the company and outside it, turns into the relationship between persons who own the physical assets and the people who use those assets in their work. Therefore, according to this theory, the person who gets involved in the development of some business and who depends on a particular asset should hold those assets as therefore the threat of his/her removal (dismissal) by the asset owner is avoided. Hiring an employee means hiring a person who assumes the risk of being excluded from using the asset by a manager's decision, while the employment of an independent contractor (through purchase of some market services) means that that particular person is given a certain amount of power to resist pressures, by the possession of his/her own assets. Thus the optimal size of the company results from the balancing of these two opposing forces (Foss, Lando, Thomsen 1999).
Grossman-Hart-Moore theory was first to provide a formal model that could explain both the advantages and the disadvantages of the company-organization, but also a theory that would convincingly establish the size of a firm.
Grossman-Hart-Moore model emphasizes the central role of non-human assets because they can be bought and sold, being included in what is called "property of assets", but many opinions also indicate the equally important role of human assets, and in particular knowledge related to production and information held by agents (key employees, managers, etc..), showing that understanding the role of "information assets" in an organization facilitates the analysis of these organizations, and that ownership and control of information - and not of physical assets-is crucial (Brynjolfsson 1994). Residual rights of control over those who have access to information related to production can often be more important than the residual rights associated with non-human assets. For example, the departure of key executives, of key decision-makers or researchers (and their knowledge) can affect other members of the company to a higher extent than the loss of equipments or certain locations (Brynjolfsson 1994). In conclusion, understanding the relationship between the role of physical assets (non-human) and human assets can lead to significant changes in the role and structure of stimulation means, especially in modern enterprises and, of course, in the knowledge-based society.

**5. Theories of implicit contracts**

The essence of these theories starts from the situation in which it is difficult to draw up comprehensive contracts, for example, when certain variables are either impossible to specify at the beginning or impossible to quantify at the end, so people often rely on "unwritten codes of conduct", i.e. the so-called implicit contracts.
These appear to be self-imposed, meaning that each party tries to behave up to the (reasonable) expectations of the other party, for fear of possible repercussions or the loss collaboration or the business (Foss, Lando, Thomsen 1999). The main idea in the theory of implicit contracts is that they function differently, within and, respectively, outside the firm (between different companies). Thus, a person is preferred as employee, rather than an independent contractor, when his/her coordination requires an implicit contract that is easier to implement within the company than on the market.
In a recent paper, Baker, Gibbons and Murphy (1997) point out that implicit contracts appear both in companies (in the case of labor relations) and between firms (in contractual relations). The difference lies in the options available to the parties when the contract is canceled. Unlike an independent contractor, an employee cannot leave the relationship with the assets that belong to him/her or to those he/she depends on. Specifically, in the model described, an independent contractor is defined by the possibility he/she has to sell the finite product in another part, while contracts within the firm are generated by the employer, who owns the finished product and therefore contracting company is determined by the provider (whether employer or not) who

owns the finished product and therefore employees do not have the possibility to leave the organization with the product or service to which they contribute. Power generated by the threat of leaving a relationship determines the implement ability of default contracts. For example, if the market demand for a property is volatile, relational contracts are vulnerable because the supplier is likely to leave the implicit contracts when the market price is higher. If the supplier is a division of the company, this option does not exist and the constant domestic prices preserved internally are a form of self imposed action. Thus it appears quite clearly that the theory of implicit contracts is related to Williamson's contributions, which show that litigation is easier to be performed internally than outside the firm. Mechanisms of solving litigations may be seen as a part of the system of self-imposed contracts within a firm (Foss, Lando, Thomsen 1999).

**6. The company and the theory of communication in a hierarchy**

Recent work on the "theory of communication in hierarchies" is based on well-known ideas from the theory of organization of Simon and March (Simon and March 1958), namely that an important function of the firm is to adapt and process new information. One should also mention the contributions of Marschak and Radner (Marschak and Radner 1972), on the theory of the team, with a completely different approach to that referring to economic organization, in which conflicts and the problem of incentives have been resolved and where the main accent is placed on coordination and communication. At the same time one should also mention the contributions of Keneth Arrow (Arrow 1985) or Casson (Casson 1997), on coordination within teams.

These works see the company as a communications network, which is designed so as to minimize both the cost of processing new information and the costs of disseminating this information between the participating parties. Communication is costly because it takes time for agencies to absorb new information sent by others, but the waste of time may be reduced by specialization in processing certain types of information (Foss, Lando, Thomsen 1999). For example, in Bolton and Dewatripont's model, each agent manages a specific type of information and different types of information are aggregated via the communication network. When the benefits of specialization outweigh the costs of communication, teams are starting to emerge (in our case, firms) (Bolton and Dewatripont 1994).

However, the theory of the team and communication within the team encounters difficulties in struggling to explain the optimum size or the limits of a company, or the way in which communication is adapted to the existing hierarchy within the company.

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