INCREASING THE FIRM EFFICIENCY USING TRANSACTION COST ECONOMICS

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Abstract: To increase the economic efficiency is the goal of any economic agent. Starting from the efficiency formulas, we can assert that every economic agent has as goal to maximize the effects or to minimize the efforts. In this context, the goal of this paper is to increase the economic efficiency by reducing the efforts that is the transaction costs. The way in which the Transaction Cost Economics contributes to the choice of the most efficient governance mode may be synthesized in a model which is the core of this paper. The paper also emphasizes the contribution of the main authors in Transaction Cost Economics.

1. Economical efficiency in a view of Transaction Costs Economics

Economical efficiency means the results acquired in an economic activity, valued through spent resources for evolving that activity [I. Vasilescu, I. Românu, C. Cicea, 2000]. With the aid of efficiency the link between the quantity and quality of efforts is established, as effects creators, and the results acquired in a certain period.

The efficiency is:

- an effects to efforts size ratio:

$$e = \frac{E}{\varepsilon} \to \text{maxim} \qquad (1)$$

- or an efforts to effects size ratio:

$$e' = \frac{\varepsilon}{E} \to \text{minim} \qquad (2)$$

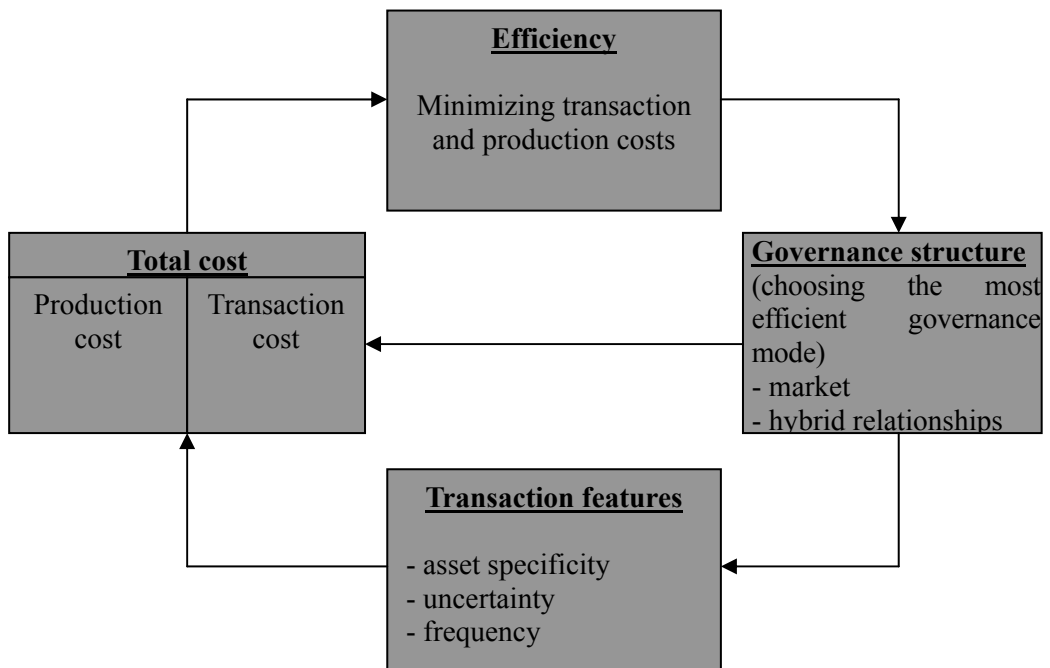E - the achieved effects (results);

ε - the made efforts (spent resources).

In the first case, the e symbol expresses the effect achieved to an effort unit and it must be *maximum*, and in the second case, e' expresses the effort made in order to achieve an effect unit and it must be *minimum*.

Increasing the economic efficiency is the goal of any economic agent. Starting from the above efficiency formulas, we can assert that every economic agent has as goal to maximize the effects or to minimize the efforts.

In this context, the goal of this paper is to increase the economic efficiency by reducing the efforts that is the transaction costs.

The way in which the Transaction Cost Economics contributes to the choice of the most efficient governance mode may be synthesized in the model from figure 1.

Efficiency

Minimizing transaction and production costs

Total cost

Production cost | Transaction cost

Governance structure
(choosing the most efficient governance mode)
- market
- hybrid relationships

Transaction features

- asset specificity
- uncertainty
- frequency

Fig. 1: Transaction costs influencing on governance modes efficiency

2. A heuristic model of Williamson

Transaction costs determine the way in which the transactions are organized. Transaction Cost Economics tries to establish the governance of these transactions defined as: "explicit or implicit contractual frame where a transaction (markets, firms and intermediary modes) is accomplished" [O.E.Williamson, 1981]

Thus, O. E. Williamson proposes to take into account the fact that governance is determined by a minimizing calculation of transaction costs, resulting in a contingent vision of this governance: "Transaction Cost Economics asserts that there are economic rational reasons for organizing some transactions in a certain way and others in other way…" [O. E. Williamson, 1981]

Neither market nor hierarchy is considered the best governance mode for all transactions. And, reciprocally, each transaction has a governance mode that is the most favorable at a time.

Transaction Cost Economics takes into account some governance modes, always in a limited number:
- market (or "discrete transactions" or "governance by market");
- hybrid modes ("trilateral or bilateral governance" according to which a third part is involved for arbitrage);
- hierarchy (or "unified governance").

O. E. Williamson [1991] characterizes the hybrid form as being "placed between market and hierarchy taking into account of incentives, adaptability and management costs. Compared to the market, the hybrid form sacrifices the incentives for a superior coordination between parts. Compared to the hierarchy, it underestimates the cooperative feature for a higher intensity of the incentives".

Transaction Cost Economics foresee the governance modes. "*A predictive theory of economic organization means to identify and explain the responsible factors for*

transactions differentiations. The main dimensions that explain the differences between transactions are asset specificity, uncertainty and frequency". [O. E. Williamson, 1985]

In order to get a contingent theory of governance modes, the explicative factors of them need to take different values from a transaction to other.

The efficiency of different governance modes basis on the following principles [O. E. Williamson, 1998]:

- the market is more efficient than firm regarding motivation;
- the firm admits a better administrative control because of rules and procedures;
- the market admits a better autonomously adapting to the relative prices variations, but the firms are able to cooperatively adapt;
- transactions in the markets are governed by law, meantime the organizational ones are governed by an private authority (order).

The total cost is composed by production cost and transaction cost. The production cost is the cost of transforming the inputs in outputs, and the transaction costs are, briefly, the cost associated with the exchange.
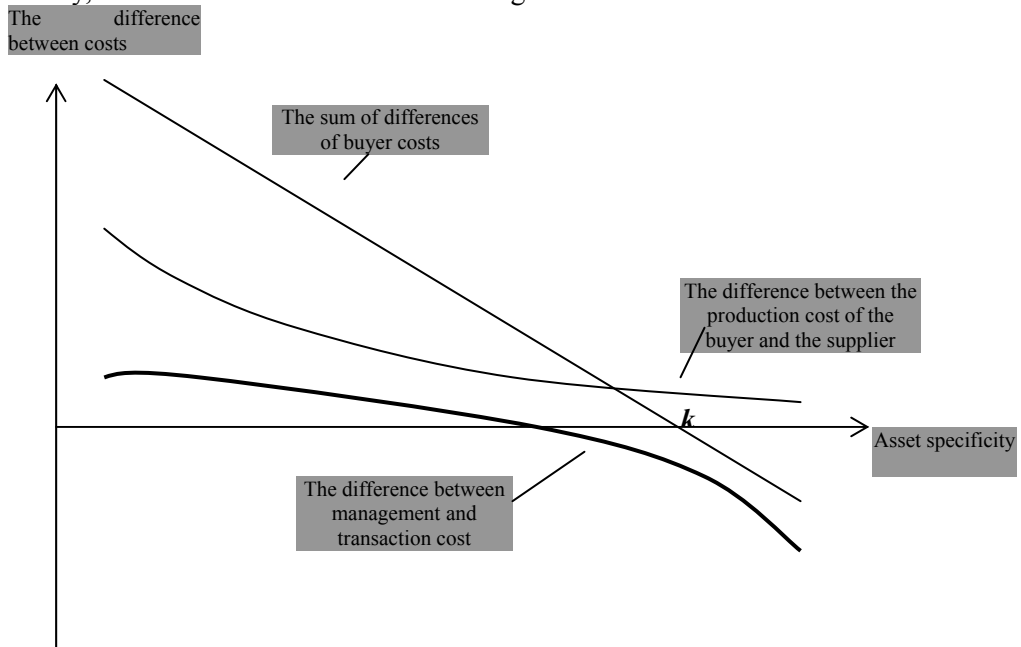
Fig. 2: The heuristic model of Williamson
Source: Emery and Marques*, 2004*

O. E. Williamson asserts that the asset specificity has affect on both costs. The suppliers commonly have lower production costs than their clients because of the scale economy. Their advantage regarding the production cost is smaller with specialized products [G.W. Emery, M.A. Marques, 2004], because there are a few opportunities for combining the clients' demands to get these economies. There are similar effects on transaction costs. The firms that buy and sell goods may use standardized contracts that not require negotiation and protection against opportunism because there are a lot of alternatives to their exchange partners. Otherwise, the contracts of buying specialized products or assets have unique clauses, and the partners are vulnerable to opportunistic behavior because they have a few (or at all) alternatives of buying or selling the

respective products. That's why O. E. Williamson emphasizes that the transaction costs are lower than management costs for the generally usage assets, and higher for the specialized ones.

3. Governance inseparability – a influencing factor in governance choice

N. S. Argyres and J. P. Liebeskind [1999] have tried to develop Transaction Cost Economics by using the "*governance inseparability*" notion, asserting that this isolated theory of governance choice needs to be modified. In their opinion, the foregoing transactions have an important role in choosing the governance mode, respectively the way they have been organized. If the firm doesn't take into account the governance mode of the present transactions, an incompatibility situation may appear between the governance mode of the evolving transactions and the new ones.

They introduce the **"*governance inseparability*"** notion as a situation in which the past governance modes of a firm deeply influence the governance mechanism types that a firm can adopt in the future.

Governance inseparability may limit the governance options of a firm in two ways. First, it may limit a firm to switch the governance mode for the same transaction type (constraint on *governance switching*). Second, it may force a firm to use an existing governance mode for a new transaction, even if that transaction would be more efficiently organized through other modes (constraint on *governance differentiation*).

This notion has important implications for the firm theory, namely there are differences between firms regarding the governance modes for a given transaction, as different firms will tend to support different expenses for the same governance mode. Also, governance inseparability may contribute to the explaining of firm bounds, because it may be too expense for a firm to internalize a transaction because of existent arrangements, even if the internalization would be the optimal solution for that transaction separately taken. In the same way, governance inseparability may determine a firm to reduce its size.

N. S. Argyres and J. P. Liebeskind have developed Transaction Cost Economics by emphasizing two factors that determine governance inseparability. First factor is represented by *contractual engagements*. The firms are the most efficiently engaged in long terms relationships/exchange [O. E. Williamson, 1979] that supposes long term contractual engagements. The last ones produce governance inseparability because are expensive, if not impossible of canceling. As a result, the contractual engagements of a firm may restrict its future governance options. Second is represented by *changes in bargaining power* of other parties (like employees, suppliers, clients). These parts may use the unforeseen increasing of bargaining power in order to force the firm to adopt suboptimal mechanisms of governing in the future.

Also, Nickerson and Silverman [1997] take into account transactional interdependencies. They emphasize on hazard interdependencies where the investment made for a transaction influences the investment made or the governance structure used for another transaction.

4. Transactions Busy mess break-point – a model of transaction and coordination costs

A. Cordella and K.A. Simon [1997] introduce the notion of busy mess break-point and propose a model of choosing the most efficient governance mode of a transaction. The secondary goal of their work was to prove the role of IT in reducing coordination

cost. They consider the total cost of a firm made by activity and transaction cost. The activity cost consists of production and opportunity cost. The production cost consists of the expected cost for raw materials, workforce and utilities, namely "the physical or other primary processes necessary to create and distribute the goods or services being produced." [Malone et al, 1998].
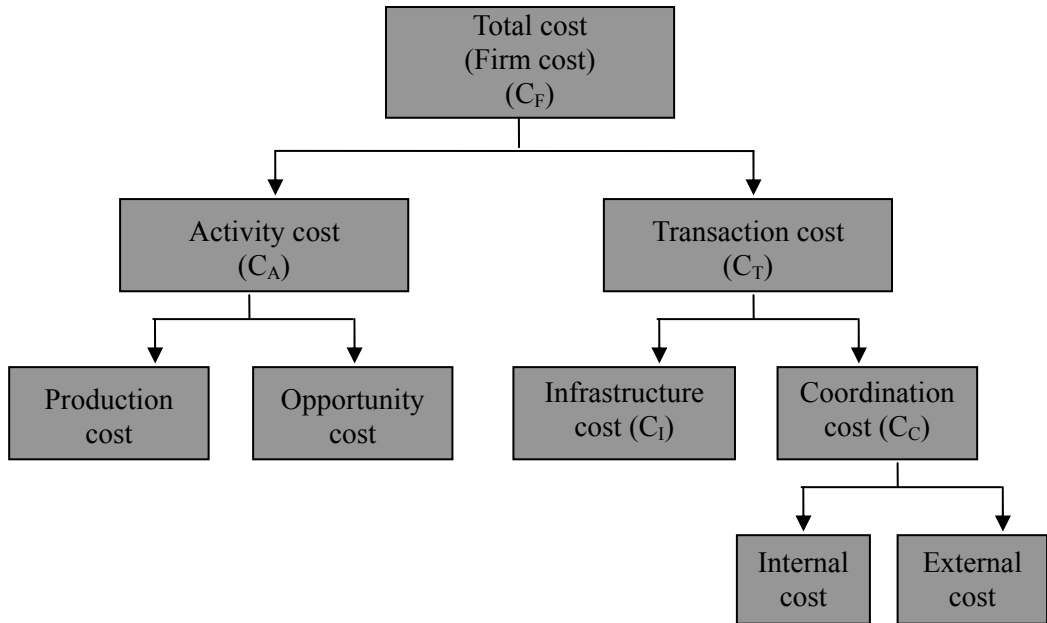
Fig. 3: The components of total cost
Source: Cordella, A., Simon, K.A., 1997

The transaction costs include infrastructure and coordination costs, namely the costs caused by uncertainty. The infrastructure cost refers to the cost of establishing the physical or communicational contact between organization's members involved in accomplishing the primary processes. The coordination cost includes the cost caused by imperfect information and opportunistic behavior of the organizational actors [Milgrom &Roberts, 1992], namely the factors that contributes to the uncertainty in organization. Coordination costs are spitted in internal and external coordination costs. The first category is caused by the need of maintaining the hierarchical structure (the control system management, establishing and maintaining the rules, etc.). The second category refers to the cost caused by presentation [O.E.Williamson, 1986] and establishment of a contingent claims contract.

For building the model, A. Cordella and K. A. Simon have started from the hypothesis according to which the transaction cost is a function of infrastructure cost and coordination cost:

$$CF = CT + CA, \quad (3)$$
$$C_t = f(CI, CC) \quad (4)$$
$$CF = f(CI, CC) + CA \quad (5)$$

where:

CF - total firm cost;

CA - activity cost;

CI - infrastructure cost;

CC – coordination cost;

CT - transaction cost.

Starting from Coase's assertion [1997], according to which the firm size determines the information quantity required by top-management for making decisions, the larger the organization, the larger the amount of information is required, the model may be shortly described: *"Exceeding a certain size, i.e. the busy mess break-point, ..., the market mechanisms become again more efficient than the planning and control mechanisms imposed by hierarchical structure. Considering increasing complexity, over the busy mess break- point, the external coordination is in fact less expensive"*[A. Cordella, K.A. Simon 1997].
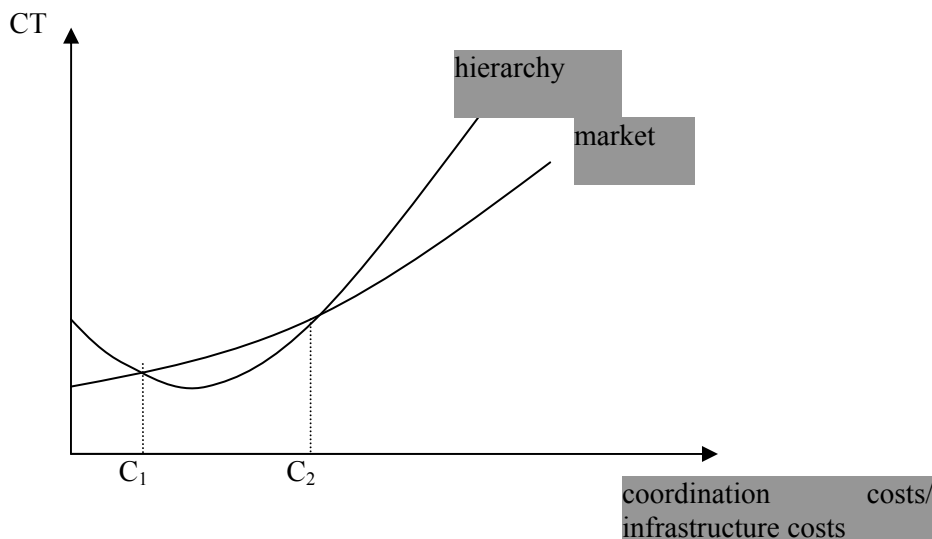
Fig. 4: Transaction cost as a function of coordination cost
Sursa: Cordella, A., Simon, K.A. 1997

According to the model, is more efficient to use a market option when the coordination cost is less than c_1. In the c_1-c_2 interval, the hierarchy is more efficient than market from the costs point of view. If the internal coordination cost take over c_2, *the busy mess break-point*, the market is again more efficient.

Following the model argumentation, A. Cordella and K.A. Simon assert that the reducing of internal coordination cost, and thus of transaction costs, must be an imperative of firm management.

5. Conclusions

Transaction Cost Economics was from the beginning interested in the reason and circumstances where the firms use hierarchy for organizing transaction instead of market. In fact, the most empirical researches have based on vertical integration. According to Transaction Cost Economics, the choice between market and hierarchy is caused by efficiency considerations. Considering the production costs being equal for all organizing alternatives, the transaction costs are the determinant factor. If the

transactions between economic agents require high specialized investment (asset specificity) and uncertainty make the contracts incomplete, making place for opportunistic behavior, the hierarchies will replace the market arrangements between independent firms in order to reduce transaction costs. In fact, transaction costs and complexity costs exert opposite dynamic pressures on the choice of firm optimal size.

Subsequently, this analysis model was complete to other governance modes consideration, called "relational contracting". The primary guiding of the research to the market-hierarchy dichotomy has determined subsequent research directions. Thus, Transaction Cost Economics views the cooperative relationships as intermediate modes between market and hierarchy. They reduce the risk associated to the bilateral contracting between independent agents, while avoid the inefficiency of bureaucracy complexity that are inherent in hierarchical organizations. This means that the cooperative arrangements are expected to be a choice of organizing the exchanges characterized by intermediate transaction costs. That is the firms will engage in cooperative relationships when the contracting risks restraint the using of short term relationships, but not so much to determine integration.

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