Recent Economic Thought

# Transaction Cost Economics and Beyond

edited by
John Groenewegen

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# TRANSACTION COST ECONOMICS AND BEYOND

edited by

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# PREFACE

This book contains the papers that were presented in 1994 at the conference "Transaction Cost Economics and Beyond" organized by GRASP at the Tinbergen Institute in Rotterdam.
It is generally recognized that transaction cost economics (TCE) is at the heart of the new theory of the firm. It is a well established research program with a well developed theoretical framework and good results in empirical testing. However, critics consider the approach too limited to understand the essential characteristics of such complex organizations like firms. Critics plea convincingly for the need to go beyond the original TCE framework and to develop a more pluralistic approach towards issues of economic organization. The new theory of the firm can only be further developed when scholars are willing to debate the issues in an open-minded, academic way. I thank the participants of the conference very much for putting so much effort in writing their papers and for their contribution to an open and stimulating discussion. It is my wish that this book contributes to the further development of the theory of the firm and that it helps us to a better understanding of the complexities of economic organization. I would like to thank the following organizations for their support: the Tinbergen Institute, the "Vereniging Trust Fonds" of the Erasmus University, the Faculty of Economics of the Erasmus University, and GRASP (Group for Research and Advice in Strategic management and Industrial Policy). Special thanks to Wilma Speyer and Saskia Elens for helping to organize the conference and editing the papers. Finally, thanks to all authors for bearing with editorial requests and meeting deadlines so efficiently.

John Groenewegen
Rotterdam

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# 1 TRANSACTION COST ECONOMICS AND BEYOND: WHY AND HOW ?

John Groenewegen

## State of the Art

Transaction cost economics (TCE) has positioned itself in the center of the economics of organization. From Williamson (1975) onwards TCE has made important progress both in conceptualization and in empirical testing (see Groenewegen and Vromen in this volume). The position of TCE at this moment is outlined in the contribution of Williamson in this volume. The key concepts are of a technical (asset specificity), of a human (bounded rationality) and a behavioral nature (opportunism). The general strategy out of which TCE works can be summarized as follows: After having characterized the transaction, the potential governance structures are discussed in terms of transaction cost minimizing capabilities. The match of transactions with governance structures is formulated in reduced form hypotheses to be confirmed in empirical research.

In this volume the empirical testing is discussed by Masten and Anderson, whereas Crocker shows how TCE can be useful in understanding long-term contracting in public utilities. In his assessment of the state of the empirical research, Masten shows how the difficulty of directly measuring transaction costs was overwon by Williamson, who showed how testable hypotheses can be devised by analyzing how the details of a transaction affect the differential efficiency of alternative governance structures. Both Masten and Anderson make clear how difficult it is to test hypotheses and also indicate that most data have to be produced by the researchers themselves. Although Masten and Anderson discuss an impressive list of empirical results, they are both clear about the limitations of that type of testing. Masten concludes that "(...) without additional information the magnitude of transaction costs differentials and the effects of the organizational form on performance cannot be inferred from standard empirical tests of TCE hypotheses" (p. 52). In that respect Masten stresses the importance of detailed case studies and points to the problem that the specificity of assets and the level of investments in those assets that determine, for instance, the size of appropriable quasi-rents are themselves decision variables. The location of facilities, the adoption of specialized designs or equipment, and the scale of investments should all be treated as endogenous variables. After his detailed account of the positive results of empirical research Masten, is clear about the dangers: "Estimation of reduced form hypotheses greatly ease data requirements but risk misconstruing the source of transaction cost differentials".

Anderson reviews how TCE has been used in the field of marketing. She clearly shows how TCE was helpful in structuring complicated problems and in formulating hypotheses, but in her overview the problems of empirical TCE research are also discussed. The "unit-of-analysis-issue" is important: firms unbundle functions (for instance advertising), which has considerable bearing on the make or buy decision. Advertising for instance is broken up into its components, market research, copy development, and media planning. Both conceptually and empirically the unit-of-analysis-issue (vertical integration of what?) raises many problems. In discussing the measurement problem, it is shown that the measurement of specificity is done by asking respondents a series of questions; each question covers a facet of specificity, but the answers combined create a scale of specificity. That is an approach based on the principle that even small sticks can make a strong bridge. In building a bridge concepts of other diciplines can also be important; Anderson explains the importance of relational norms, corporate culture, learning, and the like, and concludes: "This is in accord with Williamson's (1985) notation that the TCE model is of necessity incomplete and can benefit from supplementation in given empirical settings" (p. 79).

Crocker also discusses the results of empirical TCE research. He raises the question of the efficient governance of transactions in case of vertical disintegration of public utilities. Crocker examines the lessons provided by the TCE research on contract design and considers the implications for contracting and regulation in an environment of vertically disintegrated public utilities. Because of the relation-specific investments generally associated with public utilities, TCE indicates that spot markets for these products are likely to exhibit substantial shortcomings, and that long-term contracts may be required to mitigate the inefficiencies associated with ex ante underinvestment and ex post opportunism. Based on the results of empirical research, Crocker presents detailed insights into the complexity of long-term contracts and concludes that the institutional response to vertical disintegration by public utilities is unlikely to be a spot market. A regime in which exchange is governed by long-term contracts is predicted, and it is suggested that the arrangements will be both complex and incomplete, as well as of extended duration. All this implies a substantial regulatory challenge; regulators must face the prospect of evaluating the prudence of contractual agreements on a case-by-case basis.

The state of the art of TCE certainly is conceptually and empirically healthy, and what probably is more important is that its relationship with other disciplines seems to have become more and more healthy. That is to say: Williamson and others explicitly nowadays recognize the constraints of the TCE approach on the one hand and the importance of the contributions made by researchers in other disciplines on the other. To discuss the contributions of others and to classify the reasons and methods for going beyond TCE I take the so-called three-layer schema as point of departure (see figure 2.1, p. 18).

## Beyond the First Layer of TCE: The Individual Attributes

Key concepts in TCE are the human attribute of bounded rationality and the behavioral one of opportunism. With the introduction of these concepts Williamson departs from received neoclassical economics. However, with transaction cost minimizing as the behavioral rule, currently captured in the concept of "farsightedness", Williamson still operates in the tradition of neoclassical methodological individualism. Critics of the two individual attributes of bounded rationality and opportunism refer to the fact that a better understanding of human behavior demands going beyond the human attributes postulated in TCE into the domain of trust.

Noorderhaven makes a distinction between situational trust and character trust and states that the latter is more robust over situational circumstances, and therefore is a more reliable basis for transaction relations. Noorderhaven suggests introduceing a so-called split-core model in which human beings are both inherently trustworthy and opportunistic. The question is to find out under what set of conditions opportunistic behavior is evoked, and under what set more trustworthy behaviour can be expected. Sociological theory can be very helpful: the relationship between the actors is of utmost importance, because a relation of gain maximization with, for instance, friends and kinship will be undertaken under the constraint of considerations of equity and solidarity. Trust will also be enhanced when information about the other party's trustworthiness is accumulated. In his contribution Noorderhaven discusses several aspects of the environment and relationships which should be taken into account in order to have a better understanding about opportunistic behavior and trust.

Lindenberg also goes beyond TCE with respect to the behavioral attributes and stresses the need for the integration of a theory of social approval. Lindenberg explains that, for the analysis of internal organization, TCE is leading us astray, because it does not explain how credible commitments can be achieved. A theory of social approval should be integrated into TCE in order to have a better idea of how and why individuals behave opportunistically or trustworthily. Lindenberg looks beyond the concept of farsightedness and concludes: bounded rationality is seemingly just big enough to make (long-term, complex) contracts incomplete but not big enough to prevent farsightedness from solving this incompleteness ex ante. Clearly, farsightedness in this sense is not the opposite of myopia but rather its recognition. Farsighted contracting then is contracting with a clear eye to myopic tendencies so that the operational part of any governance structure in which many people frequently interact is the production of social approval. Relational signaling becomes then an important part to study; payment, metering, contract length, promotion, etc., are all relational signals. These signals are more important the larger the measurement problem. And the more important relational signals are, the less likely a hierarchy based on sheer authority will work. Lindenberg introduces the "club hierarchy" in which social approval is the key element. A theory of governance structure that does not consider the way the production of confirmation (social approval) is organized is considered to be seriously incomplete.

**Beyond the Second Layer of TCE: The Governance Structure**

The central governance structure to be explained is the firm. TCE has given the discussion about the characteristics of the firm a tremendous new impetus. What are the "differentia specifica of the firm? Many chapters in this volume deal with this question.

Williamson considers "fiat" and "forebearance" to be the essential characteristics of the firm. Fiat refers to the asymmetry inside organizations, and forebearance means that a hierarchy can act as its own court of ultimate appeal, which induces subordinates to exert self-control.

Ménard goes beyond this characterization and analyzes different hierarchical forms using concepts of TCE. Ménard explains that the correlation between high asset specificity and strong hierarchical relations can be understood from an analysis of the frequency and the uncertainty involved in the transactions. In case of high asset specificity, uncertainty increases because of difficulties in observing the other party. Frequency implies a reduction in the problems of observability and therefore reduces uncertainty. Ménard digs deeper into the Williamsonian hierarchy and shows how different hierarchical forms such as the pure hierarchy, the peer group, the M-form, and the simple hierarchy can be understood in relation to differences in internal uncertainty, which are linked to differences in asset specificity and frequency.

Gregory Dow departs from Holstrom and Tirole's definition of the firm as "(....) a contract between a multitude of parties." From there he discusses the characteristics of explicit and implicit contracts, the latter leading to three modes of enforcement: 1) the judicial mode to be found in agency theory; 2) the market mode to be found in TCE with reputation as the key concept; and 3) the internal enforcement mode, which refers to credible promises and threats in the relation itself. Dow then shows that contracts can also be studied without any legally enforcable obligation: the firm as a nexus of strategies. In a repetative non cooperative game three parameters turn out to be important for understanding the characteristics of the firm: 1) a measure of external uncertainty (correlation between present and future cost conditions); 2) the probability of continuation (the durability of firm-specific assets); 3) the quasi-rent loss from acceptance of an unfavorable offer.

In trying to get hold of the specific attributes of the firm, Margherita Turvani discusses the contributions of Knight, Coase, and Simon. Knight stressed the role of the entrepreneur in an uncertain environment; Coase suggested that the study of the firm has to be pushed behind the facade of the contract (what happens inside the black box of the employer-employee relation?); and from Simon the concept of "liquidity" is borrowed. Following the latter firms are not simply "devices" to perform tasks according to a contractual disposition, but are "devices" that develop capabilities to produce and expand knowledge to cope with the uncertain future. To do that well, the capability of judgement is necessary, which legitimizes authority. Specific to the employment contract is the delegation of authority. Turvani suggests that it could be claimed that the discretional areas implicit in an open-ended employment contract constitute the basis of an advantage of the firm over the market.

Blois, Dietrich, Hodgson, and Pitelis take TCE beyond the contract discussion into the area of strategy, competence, and evolution.

Keith Blois discusses the differences between strategic management and TCE. He explains problems with respect to the unit of analysis (transaction or the supplier) and the issue of long-run effects. Blois elaborates the discussion on strategizing or economizing (Williamson: economizing is the best strategy) and on long-run efficiency (the fitter will survive). He explains that the decomposition of transaction costs (between buyer and seller) implies some form of bargaining, an issue also raised in the chapters of Dietrich and Dow. Finally, Blois discusses the issue of power from the point of view of strategic management.

In his contribution Michael Dietrich takes the analysis of the governance structure one step further into the area of strategy, entering the third layer of the schema of Williamson in which firms influence the institutional environment. Departing from Dow (1987) in which it is explained that the characteristics of the actors, the transaction, and the organization should be exogenous in order to be able to make a proper comparative static analysis, Dietrich argues that strategies of stakeholders purposefully change the characteristics of the organization. It is a matter of strategy to invest in the participants of the organization, to offer opportunities to learn and innovate. These changes of and inside the organization make a comparative static analysis inadequate for analyzing the dynamics of governance structures. Dietrich suggests that theories of flexible specialization, theories of Neo-Schumpeterian type, and ideas of the French Regulation School all offer useful insights and concepts for capturing the process of institutional change.

Geoff Hodgson departs from the contributions of the so-called old institutionalists and stresses the importance of competence and evolution. Contrary to the idea that the existence of the firm is best explained by its capacity to diminish transaction costs and that the interaction between individuals can for analytical reasons be best reduced to the calculus of costs, Hodgson claims that the firm should be understood in terms of capabilities, learning, competence, corporate culture, and path dependency. It is suggested that firms exist because they provide a relatively protected enclave in which wider group as well as individual learning can take place. Because of the lack of a common culture the market lacks such a communicative competence. Recognizing these features of the firm implies a plea for a more pluralistic approach towards the firm.

Christos Pitelis summarizes his arguments for going beyond TCE in a few clear statements. After having argued that firms need not preexist and need not differ from markets with respect to asymmetries in the relation, Pitelis raises the question: Do firms emerge for contractual (efficiency) or predatory (power) reasons? There is no conclusive evidence to answer this question which leads to the suggestion that efficiency and power could coexist and that the one can lead to the other. It is very likely that both efficiency and power play a role: firms go for profit both by reducing transaction costs and by increasing market power. Pitelis also pleas for a pluralistic approach under the name of thesmoeconomics (thesmos = institution, eco = house/home, nemo = administer).

Elias Khalil poses some very fundamental questions about the individuality of the firm. He discusses three approaches that challenge the neoclassical approach to the firm as a production function. Besides TCE, the competence and evolutionary approaches are also examined on the question whether they logically imply a specific nature of the firm. The answer is negative; all three approaches deal with a facet of the firm. The central question in Khalil's contribution is whether the facet discussed makes the organizational order qualitatively different from the market structure order and whether it does identify a constitution of the firm. Not having found a positive answer in one of the three approaches, Khalil suggests following Penrose and identifying the firm as an organization with strategic goals and autonomy to make decisions about them.

In several contributions, it is explained that the TCE approach is adequate for a comparative static analysis. However, trying to grasp the dynamics of institutional change demands another type of approach. In the contributions of Paul Beije and Bart Nooteboom, it is explained how the introduction of dynamics could take place and what kind of complexities can then be expected. Beije applies concepts discussed in the previous chapters to the issues of technological learning. Competence, strategy, and path dependency turn out to be crucial concepts for understanding problems of TCE and technology. He states that the proper question is perhaps not which governance structure minimizes transaction costs, but which one enables technological learning and appropriation of innovation profits. Applying the ideas of technological learning, opportunism, prices, quality, strategy, and the like, to the relation with suppliers, Beije discusses three hypothetical cases in which he elaborates the problems which arise in introducing the issue of technological learning into TCE research. Because the knowledge base of each firm is different and composed of firm-specific assets, networking can be an adequate governance structure for firms to monitor technological developments and to learn from the different knowledge bases of other firms.

Bart Nooteboom further develops the issue of learning in networks. He explains the deeper notion of the boundedness of rationality in terms of a constructivist view: cognition varies across subjects to the extent that they have developed their "categories" in different environments. For TCE analysis this implies that one cannot acquire knowledge from other sources if the categories do not fit. It is important to realize that the categories are constructed from buying and using (not a reflection of fixed underlying realities), which implies the need to develop a theory in which preference formation and innovation are endogenous. How do processes of learning in interaction between agents take place? The basic assumptions are that agents seek to learn, i.e., to improve their competence in perception, interpretation, evaluation, or action, partly by practicing (learning by doing), partly by employing the competence of other agents (learning by interaction). The aim of Nooteboom is to reconstruct the decisions of different levels of transactions: search and evaluation of partners, setup of the terms for the transaction and for investments in transaction relations, execution and control, adjustment of perception, and decision routines. Nooteboom introduces the concept of "External Economy of Cognitive Scope" (EECS) and develops a simulation model in which a decision rule for cooperation is specified, incorporating both traditional issues of TCE and issues of evolution, sources of variation, selection environment, and the transmission of characteristics, in order to elucidate the processes involved in the external economy of cognitive scope.

## Beyond the Third Layer of TCE: The Institutional Environment

In his layer schema, Williamson introduces the institutional environment as the third layer: norms, legal rules, and other elements of the environment influence the governance structure as a shift parameter. In a specific institutional environment, a specific governance structure is the fitter, whereas, in another environment, another structure is more efficient. So Williamson certainly does not deny the importance of understanding the characteristics of the institutional environment, but in his research the focus is not on the environment, and certainly the influence of governance structures on the environment (strategy) is underdeveloped. In the preceding paragraph several contributions in this volume were discussed in which the interaction between governance structure and institutional environment is the focal point. Then the role of history and strategy is stressed. In the contribution of Lars Magnusson and Jan Ottosson the importance of a rich historical analysis is underlined: TCE cannot explain real historical transitions, because real choices depend on historically received information and on the real available institutions. A plea for a pluralist approach is presented; concrete choices depend on transaction costs, but also on technological conditions, on market conditions, and on institutional conditions. It is important to stress the fact that actors cannot ex ante measure transaction cost differentials. Magnusson and Ottosson also discuss the issue of selection; it is explained that competition can select, but that in reality mostly markets are organized and controlled, which raises questions of power.

In the concluding chapter John Groenewegen and Jack Vromen discuss TCE as a scientific research program in the Lakatosean sense. They identify the hard core of TCE, explain that rival theories can be relevant for understanding (aspects of) economic organization, and indicate what a more pluralistic approach beyond TCE could look like.

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# 2 EFFICIENCY, POWER, AUTHORITY AND ECONOMIC ORGANIZATION

Oliver E. Williamson[1]

Viewing the firm as a governance structure, rather than as a production function, has had numerous ramifications. For one thing, the boundary of the firm is no longer defined by technology but is something to be derived (from comparative transaction cost considerations). For another, marginal analysis gives way to discrete structural analysis (Simon, 1978; Williamson, 1991). Also, attention is focused on much more microanalytic features of transactions and organization. The roles of power and authority come under renewed scrutiny in the process.

This chapter endorses the efficiency approach to economic organization and brings it to bear on issues of power and authority. I begin with a general discussion of efficiency in which "rational spirit" and "systems approach" distinctions are made. The transaction cost economics approach is sketched in section 2. Power is examined in section 3. An interpretation of authority is advanced in section 4. Concluding remarks follow.