

Critiques of transaction cost economics: An overview

Nicolai J. Foss and Peter G. Klein

Ever since its emergence in the early 1970s (e.g., Williamson 1971; Furubotn and Pejovich 1972; Alchian and Demsetz 1972; Arrow 1974; Jensen and Meckling 1976), the new institutional economics has been the subject of intense debate. As the perhaps most important constituent body of thought in the NIE, transaction cost economics (TCE) is no exception. Much the debate on TCE has been ‘internal,’ in the sense that it has been conducted between scholars generally sympathetic to the approach (e.g., Hart 1995; Kreps 1996; Furubotn 2002; MacLeod 2002). However, there also is a large set of ‘external’ critiques, arising from sociologists, heterodox economists, and management scholars. For instance, early critics argued that TCE ignored the role of differential capabilities in structuring economic organisation (Richardson 1972); neglected power relations (Perrow 1986), trust, and other forms of social embeddedness (Granovetter 1985); and overlooked evolutionary considerations, including Knightian uncertainty and market processes (Langlois 1984). Such critiques have been echoed and refined in numerous more contemporary contributions, and criticising TCE remains a thriving industry. The incumbents are mainly sociologists (Freeland 2002; Buskens et al. 2003) and non-mainstream economists (Hodgson 1998; Loasby 1999; Dosi and Marengo 2000), but new entrants are increasingly recruited from the ranks of management scholars (Kogut and Zander 1992; Conner and Prahalad 1996; Ghoshal and Moran 1996). This chapter offers a brief review and assessment of this critical literature. By no means do we claim to be comprehensive; unavoidably many authors, papers, and insights must be left out. However, we aim to capture what we see as the fundamental critiques.

Basic Characteristics of Transaction Cost Economics

Coase and Williamson

The foundations of TCE were laid by Coase (1937, 1960). The starting point for a transaction cost approach to governance and organisational issues is Coase’s (1960) insight that if it weren’t for transaction costs, all gains to trade would be exhausted and this could take place under any organisational arrangement. This connects to Coase’s earlier paper (Coase 1937), for the argument in that paper is that the assessment of the net benefits of organisational and governance alternatives must

proceed in terms of a comparative analysis of the costs of transacting under the relevant alternatives (Barzel and Kochin 1992).

In a string of influential contributions, Williamson (notably, 1975, 1985, 1996) has built a theory that while built on Coasian foundations also incorporates ideas from psychology and contract law. The behavioural starting points in Williamson's theorising are bounded rationality and opportunism. Simon's (1951) notion of bounded rationality implies the presence of contractual incompleteness and, consequently, a need for adaptive, sequential decision-making. Opportunism is defined as 'self-interest seeking with guile,' and its implication is that contracts will often need various types of safeguards, such as 'hostages' (e.g., the posting of a bond with the other party). The unit of analysis in Williamson's work is the multi-dimensional transaction. In addition to uncertainty (which is 'frozen'), the dimensions of transactions that are primarily determinative of the costs of those transactions are frequency and asset specificity. The latter has increasingly become the central independent variable in TCE analysis. Specific assets open the door to opportunism. If contracts are incomplete due to bounded rationality, they must be renegotiated as uncertainty unfolds, and if a party to the contract (say, a supplier firm) has incurred sunk costs in developing specific assets (including human capital), that other party can opportunistically appropriate an undue part of the investment's pay-off ('quasi-rents') by threatening to withdraw from the relationship. This situation leads to an inefficient outcome. Efficiency dictates the internalisation within a firm of transactions that involve highly specific assets. More generally, Williamson (1985, p. 68) argues that variety in contracts and governance structures '... is mainly explained by underlying differences in the attributes of transactions.' The general design principle of discriminating alignment dictates aligning transactions that differ in the dimensions of uncertainty, frequency and asset specificity with governance structures which differ in the capacities to handle different transactions (cf. the earlier discussion of governance structures and governance mechanisms) in transaction cost discriminating way. Thus, specific constellations of (values for) the uncertainty, frequency and asset specificity variables map directly into specific governance structures. This is the main predictive content of Williamsonian TCE.

Fundamental Characteristics of Transaction Cost Economics

We here briefly outline a number of fundamental characteristics of TCE. Other characteristics may be identified; however, the characteristics below are those that the critics have focused on.

Cognition. Bounded rationality is usually invoked as a necessary part of TCE. ‘But for bounded rationality,’ Williamson argues (1996, p. 36), ‘all issues of organization collapse in favor of comprehensive contracting of either Arrow-Debreu or mechanism design kinds.’ What Williamson calls ‘comprehensive contracting’ does not allow for ‘governance structures’ in the sense of mechanisms that handle the coordination and incentive problems produced by unanticipated change (Williamson 1996, chapter 4).

Motivation. Motivation is assumed to be extrinsic (Frey 1997). Hence, stronger monetary incentives call forth more effort (in at least one dimension).

Explaining economic organisation. Problems of economic organisation are explained generically in terms of minimising transaction costs related to incentive conflicts, usually involving the hold-up problem. TCE generally disregards coordination type problems; the problem is to align incentives rather than to coordinate actions. Production costs play no direct role in the explanation.

Everything is given. The choice of efficient economic organisation is portrayed as a standard maximisation problem in the case of contract design or as a choice between given ‘discrete, structural alternatives’ (Williamson 1996) in the case of the choice of governance structures. At least in the canonical Williamsonian versions of TCE, learning and innovation are explicitly excluded from consideration because of the complexities they raise (Williamson 1985, p. pp). There may be reference to processes (other than the fundamental transformation), but this has the character of pointing to evolutionary processes that are assumed to perform a sorting between organisational forms in favour of the efficient ones (Williamson 1985).

Criticising Transaction Cost Economics

Most of the above characteristics are not particular to transaction cost economics, but are generally made in game-theoretical microeconomics. Thus, critics of TCE may appear to be really criticising modern microeconomics. However, while this may indeed be the case for some critics, the reason that TCE has drawn particular fire may lie in its main *explanandum*, that is, the firm. Thus, while some critics may balk at methodological individualism and assumptions of full, instrumental rationality in general, they are likely to find such assumptions *particularly* objectionable when they are applied to the theory of the firm. Thus, in much of the literature that is critical of the modern theory of the firm, firms are often portrayed in rosy terms as ‘mini-societies’ (Freeland 2002) that provide ‘identity’ (Kogut and Zander 1996), ‘higher-order organising principles’ (Kogut and Zander 1992),

trust relations (Ghoshal and Moran 1996), and collective learning (Hodgson 1998) that, purportedly, ‘atomistic’ markets cannot provide. While we are sceptical of such arguments, we acknowledge that they may point to unresolved issues and weak spots in TCE. In the following sections, we discuss and assess a number of critiques of TCE in greater detail.

Cognition and Motivation

While often invoked, the role of bounded rationality in Williamson’s work is mainly to provide a reason why contracts are incomplete. The theory is taken up with comparative institutional exercises, focusing on transaction cost economising, and hence has no room for the process aspects introduced by more substantive notions of bounded rationality (e.g., Furubotn 2002). However, Dow (1987) argues that it is inconsistent to invoke bounded rationality as a necessary assumption in the analysis of contracts and governance structures, and then assume that substantively rational choices can be made with respect to the contracts and governance structures (that are imperfect because of bounded rationality). In contrast, bounded rationality has long been a central assumption in organisation theory (e.g., March and Simon 1958). In fact, recent critics of the theory of the firm have drawn explicitly on these older sources to develop alternative, evolutionary views emphasising the role of bounded rationality in problem-solving, and the role of firms as cognitive structures around such problem-solving efforts (e.g., Dosi and Marengo 1994). Other critics, also echoing behaviourist organisation theory, argue that a key characteristic of firms is that they tend to shape employee cognition (Kogut and Zander 1996; Hodgson 1998).

While the role of bounded rationality in the theory of the firm has given rise to a fair amount of debate, it is nothing compared to the enormous amount of critical writings on the motivational assumptions in the theory. In particular, opportunism has been a favourite *bête-noire*. The critique of opportunism takes various forms. Empirically, the relevance of opportunism is dismissed by pointing to the low frequency with which opportunistic action can be observed, for example, in industrial networks or in long-term associations between firms and their suppliers (see, e.g., Håkansson and Snehota 1990). The obvious problem with such arguments is that they are based on a misunderstanding of the counterfactual nature of reasoning in the theory of the firm: Opportunistic behaviour is seldom observed because governance structures are chosen to mitigate opportunism. Another argument asserts that opportunism is not a necessary assumption in the theory of the firm (e.g., Kogut and Zander 1992), but this line of reasoning fails to provide convincing alternative accounts.

According to a more recent and more sophisticated set of arguments, the primary problem with the treatment of motivation in the theory of the firm is not opportunism *per se*, but rather the assumption that all motivation is of the ‘extrinsic’ type (Ghoshal and Moran 1996; Osterloh and Frey 2000). In other words, all behaviour is understood in terms of encouragement from an external force, such as the expectance of a monetary reward. (In contrast, when ‘intrinsically’ motivated, individuals wish to undertake a task for its own sake). These arguments do not necessarily deny the reality of opportunism, moral hazard, and so on, but assert that there are other, more appropriate ways to handle these problems than providing monetary incentives, sanctions, and monitoring. The arguments are often based on social psychological research (notably Deci and Ryan 1985) and on experimental economics (e.g., Fehr and Gächter 2000).

Few transaction cost scholars have reacted in accommodating way to these critiques. With respect to the bounded rationality point, we suspect this is partly because taking these critiques seriously means questioning fundamental tenets of mainstream economic modelling. For example, taking bounded rationality seriously opens up a Pandora’s box because bounded rationality challenges the game-theoretic foundations underlying the formal literature on the theory of the firm (i.e., subjective expected utility theory, the independence of payoff utilities, the irrelevance of labelling, and common prior beliefs (Camerer 1998)). In our opinion, working with alternative motivational assumptions may be a more fruitful way forward. It is easier to doctor utility functions than cognitive assumptions. There is established social psychology work, the insights of which may be fed relatively directly into modelling efforts. Moreover, the implications for economic organisation may also seem more immediate (see Lazear 1991; Fehr and Gächter 2000 for examples).

Firm Heterogeneity, Capabilities, and Production Costs

Many writers within heterodox economics (particularly evolutionary economics) and strategic management embrace ‘capabilities,’ ‘dynamic capabilities,’ or ‘competence’ approaches (e.g., Langlois 1992; Kogut and Zander 1992; Dosi and Marengo 1994; Winter 1991). These writers have often been fiercely critical of TCE. The critique concerns the reliance on opportunism and the neglect of differential capabilities (i.e., firm heterogeneity) and dynamics (e.g., Winter 1991; Langlois 1992; Kogut and Zander 1992) in TCE. Knowledge-based writers often argue that differential capabilities give rise to different production costs, and that such cost differentials may crucially influence the make or buy decision. Thus, firms may internalise activities because they can carry out these activities in a more production (not transaction) cost-efficient way than other firms are capable of. Some

writers argue that the existence of the firm can be explained in knowledge-based terms and without making use of the assumption of opportunism (Demsetz 1988; Kogut and Zander 1992; Hodgson 2004). They argue that firms can build capabilities and engage in learning efforts that markets cannot. However, this is postulated rather than shown. One may also argue that to the extent that firms indeed cultivate capabilities to a larger extent than firms do, this is so for TCE reasons: Capabilities are firm-specific assets that give rise to an appropriable quasi-rent, and, hence, should be organised under unified governance.

While we are sceptical of the specific knowledge-based explanations for economic organisation, we acknowledge that the view does point to some weak points in the theory of the firm. For example, differential capabilities probably do play a role in determining the boundaries of the firm (Walker and Weber 1984; Monteverde 1995; Argyres 1996). However, there are two major problems in this area that may hinder progress. The first is that the nature of the central construct (i.e., capabilities) itself is highly unclear. It is not clear how capabilities are conceptualised, dimensionalised, and measured, and it is not clear how capabilities emerge and are changed by individual action (Abell, Felin and Foss 2008). The second problem partly follows from the first: the mechanisms that link capabilities and economic organisation are unclear (Foss 2005).

Process Issues

The claim that the theory of the firm, because of its emphasis on efficiency at a point of time and on cross-sectional variation, is ahistorical and neglects process has often been made by economists and management scholars within both the knowledge-based and the evolutionary perspective (e.g., Winter 1991, p. 192).

One way to interpret this critique is that the theory of the firm seeks to explain the governance of individual transactions (Williamson 1996), or clusters of attributes (Holmstrom and Milgrom 1994), without identifying how the governance of a particular transaction may depend on how previous transactions were governed. Argyres and Liebeskind (1999) term this historical dependency ‘governance inseparability.’ Where governance inseparability is present, firms may rely on governance structures that appear inefficient at a particular time, but which make sense as part of a longer-term process. Changes in governance structure affect not only the transaction in question, but the entire temporal sequence of transactions. This may make organisational form appear more ‘sticky’ than it really is. This criticism will sound familiar to Austrian and evolutionary economists, who

have long argued for a ‘process’ view of economic activity that takes time seriously (Hayek 1948; Kirzner 1973).

Williamson (1996), recognising the need to incorporate history into transaction cost economics, has introduced the notion of remediableness as a welfare criterion. The outcome of a path-dependent process is suboptimal, he argues, only if it is remediable – that is, an alternative outcome can be implemented with net gains. Merely pointing to a hypothetical superior outcome, if it not attainable, does not establish suboptimality. Thus, a governance structure or contractual arrangement ‘for which no superior *feasible* alternative can be described and *implemented* with expected net gains is *presumed* to be efficient’ (Williamson 1996, p. 7).

The explanation of economic organisation in terms of efficiency has been one of the most frequently criticised characteristics of the theory of the firm: Assuming that agents can figure out the efficient organisational arrangements seems to collide with the assumption of bounded rationality (Dow 1987; Furubotn 2002). Presumably in response to this problem, early work in the theory of the firm often explicitly assumed that market forces work to cause an ‘efficient sort’ between transactions and governance structures, an assumption that is not in general tenable. The problem is that the efficiency assumption has always been taken as an essential, but untested, background assumption.

However, an approach is to see if ‘appropriately’ organised firms – that is, firms organised along the lines recommended by the theory of the firm – outperform the feasible alternatives. Several papers in the empirical TCE literature use a two-step procedure in which organisational form (in particular, the relationship between transactional characteristics and governance structure) is endogenously chosen in the first stage, then used to explain performance in the second stage. By endogenising both organisational form and performance this approach also mitigates the selection bias associated with OLS regressions of performance on firm characteristics.

Conclusion

Two decades ago Paul Milgrom and John D. Roberts (1988, p. 450) argued that the ‘incentive-based transaction costs theory has been made to carry too much of the weight of explanation in the theory of organisations,’ and predicted that ‘competing and complementary theories’ would emerge, ‘theories that are founded on economising on bounded rationality and that pay more attention to changing technology and to evolutionary considerations.’ However, no serious competitors have

emerged. One possible reason is that TCE is sufficiently successful, theoretically and empirically, that competitors have a hard time gaining a foothold. Still, as we have stressed throughout this chapter, many of the critiques do in fact point to weaknesses that should ideally be remedied. A further reason is that the critics tend to focus on phenomena that are difficult to model. Innovation, entrepreneurship, bounded rationality, learning, evolutionary processes, and differential capabilities are examples of such phenomena. Finally, the various critiques are not separate but overlapping or complementary. For example, the claim that TCE neglects bounded rationality is very close to the claim that it ignores differential capabilities, learning, and path dependence. In other words, the critiques come in a package, so that embracing one critique may be taken as embracing the rest – which would mean abandoning TCE as we know it.

References

Abell, Peter, Teppo Felin, and Nicolai J. Foss (2008), 'Building Links for the Routines, Capabilities, and Performance Constructs,' *Managerial and Decision Economics* (forthcoming).

Alchian, Armen A. and Harold Demsetz (1972), 'Production, Information Costs, and Economic Organization,' *American Economic Review* 62: 772-795.

Argyres, Nicholas S (1996), 'Evidence on the Role of Firm Capabilities in Vertical Integration Decisions,' *Strategic Management Journal* 17: 129-50.

Argyres, Nicholas S. and Julia Porter Liebeskind (1999), 'Contractual Commitments, Bargaining Power, and Governance Inseparability: Incorporating History into Transaction Cost Theory,' *Academy of Management Review* 24: 49-63.

Arrow, Kenneth (1974), *The Limits of Organization*, New York: Norton.

Benabou, Roland and Jean Tirole (2003), 'Intrinsic and Extrinsic Motivation,' *Review of Economic Studies* 70: 489-520.

Brousseau, Eric and M'hand Fares (2000), 'Incomplete Contracts and Governance Structures: Are Incomplete Contract Theory and New Institutional Economics Substitutes or Complements?' in *Institutions, Contracts and Organization: Perspectives from New Institutional Economics*, Claude Ménard (ed), Cheltenham: Edward Elgar.

Buskens, Vincent, Werner Raub, and Chris Snijders (eds) , (2003), *The Governance of Relations in Markets and Organizations*, Amsterdam: JAI Press.

Camerer, Colin and Marc Knez (1996), 'Coordination, Organizational Boundaries and Fads in Business Practice,' *Industrial and Corporate Change*, 5, pp. 89-112.

- Camerer, Colin (1998), 'Behavioral Economics and Nonrational Organizational Decision Making,' in *Debating Rationality*, Jennifer J. Halpern and Robert N. Stern (eds), Ithaca: Cornell University Press.
- Coase, Ronald H. (1937), 'The Nature of the Firm,' *Economica*, N.S., 4, pp. 386-405.
- Coase, Ronald H., (1972), 'Industrial Organization: A Proposal for Research,' in *idem.*, *The Firm, the Market, and the Law*, Chicago: University of Chicago Press, 1988.
- Coase, Ronald H. (1988), *The Firm, the Market and the State*, Chicago: University of Chicago Press.
- Deci, Edward L. and Richard M. Ryan (1985), *Intrinsic Motivation and Self-Determination in Human Behavior*, New York: Plenum.
- Demsetz, Harold (1991), 'The Nature of the Firm Revisited,' in Oliver E. Williamson and Sidney G. Winter, (eds) (1991), *The Nature of the Firm*, Oxford: Blackwell.
- Donaldson, Lex (1996), *For Positivist Organization Theory: Proving the Hard Core*, London: Sage.
- Dosi, Giovanni and Luigi Marengo (1994), 'Some Elements of an Evolutionary Theory of Organizational Competences,' in *Evolutionary Concepts in Contemporary Economics*, Richard W. Englander (ed), Ann Arbor MI: University of Michigan Press.
- Dosi, Giovanni and Luigi Marengo (2000), 'On the Tangled Discourse Between Transaction Cost Economics and Competence-based Views of the Firm: Some Comments,' in *Competence, Governance, and Entrepreneurship*, Nicolai J Foss and Volker Mahnke (eds), Oxford: Oxford University Press.
- Dow, Gregory K (1987), 'The Function of Authority in Transaction Cost Economics,' *Journal of Economic Behavior and Organization*, 8: 13-38.
- Fehr, Ernst and Simon Gächter (2000), 'Fairness and Retaliation: The Economics of Reciprocity,' *Journal of Economic Perspectives* 14: 159-182.
- Foss, Nicolai J (2005), *Strategy and Economic Organization in the Knowledge Economy*, Oxford: Oxford University Press
- Freeland, Robert F (2002), 'The Firm as a Minisociety,' draft manuscript.
- Frey, Bruno (1997), *Not Just for the Money: An Economic Theory of Personal Motivation*, Aldershot: Edward Elgar.
- Furubotn, Eirik (2002), 'Entrepreneurship, Transaction-Cost Economics, and the Design of Contracts,' in *The Economics of Contracts*, Eric Brousseau and Jean-Michel Glachant (eds), Cambridge: Cambridge University Press.
- Furubotn, Eirik and Stephen Pejovich (1972), 'Property Rights and Economic Theory: A Survey of Recent Literature,' *Journal of Economic Literature* 4: 1137-1162.

Ghoshal, Sumantra, and Peter Moran (1996), 'Bad for Practice: A Critique of the Transaction Cost Theory,' *Academy of Management Review* 21: 13-47.

Granovetter, Mark S (1985), 'Economic Action and Social Structure: The Problem of Embeddedness', *American Journal of Sociology* 91: 481-510.

Grossman, Sanford, and Oliver Hart (1986), 'The Costs and Benefits of Ownership: A Theory of Vertical Integration,' *Journal of Political Economy* 94: 691-719.

Håkansson, Håkan and Ivan Snehota (1990), 'No Business is an Island: The Network Concept of Business Strategy,' *Scandinavian Journal of Management* 5: 187-200.

Hart, Oliver (1995), *Firms, Contracts, and Financial Structure*, Oxford: Oxford University Press.

Hayek, Friedrich A. von (1948), *Individualism and Economic Order*, Chicago: University of Chicago Press.

Hodgson, Geoffrey M (1989), *Economics and Institutions: A Manifesto for a Modern Institutional Economics*, Oxford: Polity Press.

Hodgson, Geoffrey M (1998), 'Competence and Contract in the Theory of the Firm,' *Journal of Economic Behavior and Organization* 35: 179-201.

Hodgson, Geoffrey M (2004), *The Evolution of Institutional Economics: Agency, Structure and Darwinism in American Institutionalism*, London and New York: Routledge.

Holmström, Bengt and Paul Milgrom (1991), 'Multitask Principal-Agent Analysis: Incentive Contracts, Asset Ownership and Job Design,' *Journal of Law, Economics and Organization* 7: 24-54.

Jensen, Michael C. and William Meckling (1976), 'The Theory of the Firm: Managerial, Agency Costs and Ownership Structure,' *Journal of Financial Economics* 3: 305-360.

Kirzner, Israel M (1973), *Competition and Entrepreneurship*, Chicago: University of Chicago Press.

Knight, Frank H (1921), *Risk, Uncertainty and Profit*, 1964 reprint, New York: Augustus M. Kelley.

Kogut, Bruce and Udo Zander (1992), 'Knowledge of the Firm, Combinative Capabilities, and the Replication of Technology,' *Organization Science* 3: 383-397.

Kogut, Bruce and Udo Zander (1996), 'What Firms Do? Coordination, Identity and Learning,' *Organization Science*, 7, pp. 502-518.

Kreps, David M (1996), 'Markets and Hierarchies and (Mathematical) Economic Theory,' *Industrial and Corporate Change* 5: 561-595.

Langlois, Richard N, and Paul L. Robertson (1995), *Firms, Markets, and Economic Change: A Dynamic Theory of Business Institutions*, London: Routledge.

- Langlois, Richard N (1984), 'Internal Organization in a Dynamic Context: Some Theoretical Considerations,' in *Communication and Information Economics: New Perspectives*, Jussawalla M. and Helene Ebenfield (eds), Amsterdam, North-Holland, pp. 23-49.
- Langlois, Richard N (1992), 'Transaction Cost Economics in Real Time,' *Ind. Corp. Change*, 1, pp. 99-127.
- Lazear, Edward P (1991), 'Labor Economics and the Psychology of Organizations,' *Journal of Economic Perspectives* 5: 89-110.
- Lien, Lasse B. and Peter G. Klein (2004), 'Can the Survivor Principle Survive Diversification?' Working Paper, Norwegian School of Economics and Business Administration, <http://euro.nhh.no/sol/tceworkshop/>
- Lindenberg, Sigward (2003), 'The Cognitive Side of Governance,' *Research in the Sociology of Organizations*, 20, pp. 47-76.
- MacLeod, William Bentley (2002), 'Complexity and Contract,' in *The Economics of Contracts*, Eric Brousseau and Jean-Michel Glachant (eds), Cambridge: Cambridge University Press.
- March, James G. and Herbert A. Simon (1958), *Organizations*, New York: Wiley.
- Masten, Scott E., James W. Meehan, and Edward A. Snyder (1991), 'The Costs of Organization,' *Journal of Law, Economics and Organization*, 7: 1-25.
- Mayer, Kyle and Nicholas Argyres (2007), 'Contract Design as a Firm Capability: An Integration of Learning and Transaction Cost Perspectives,' *Academy of Management Review* 32: 1060-1077.
- Milgrom, Paul J. and John D. Roberts (1988), 'Economic Theories of the Firm: Past, Present, and Future,' *Canadian Journal of Economics*, 21:444-458.
- Osterloh, Margit and Bruno Frey (2000), 'Motivation, Knowledge Transfer and Organizational Form,' *Organization Science* 11: 538-550.
- Perrow, Charles (1986), *Complex Organizations: a Critical Essay*, 3rd ed, New York: McGraw-Hill.
- Perrow, Charles (2002), 'Economic Theories of Organization,' *Central Currents in Organization Theory* 4: 244-271.
- Richardson, George B (1972), 'The Organisation of Industry,' *Economic Journal*, 82: 883-96.
- Schumpeter, Joseph A (1934), *The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest and the Business Cycle*, Cambridge Mass.: Harvard University Press.
- Simon, Herbert A (1951), 'A Formal Theory of the Employment Relationship,' *Econometrica* 19: 293-305.
- Walker, Gordon, and David Weber (1984), 'A Transaction Cost Approach to Make-or-Buy Decisions,' *Administrative Science Quarterly* 29: 373-91.

Williamson, Oliver E (1971), 'The Vertical Integration of Production: Market Failure Considerations,' *American Economic Review* 61, pp. 112-123.

Williamson, Oliver E (1985), *The Economic Institutions of Capitalism*, New York: Free Press.

Williamson, Oliver E (1996), *The Mechanisms of Governance*, Oxford: Oxford University Press.

Williamson, Oliver E (1998), 'Human Actors and Economic Organization,' paper for the 1998 Paris ISNIE conference.

Winter, Sidney G (1991), 'On Coase, Competence, and the Corporation,' in *The Nature of the Firm: Origins, Evolution, and Development*, Oliver E. Williamson and Sidney G. Winter (eds), Oxford: Basil Blackwell.