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Transaction cost economics and business administration

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Abstract

This paper traces the origins of transaction cost economics to three seminal people who had an intense interest in business: Ronald Coase, Chester Barnard, and Herbert Simon. By contrast with the neoclassical theory of the firm, which is a top-down construction, the transaction cost economics theory of the firm is a bottom-up construction—which is to say that it is much more microanalytic (the transaction is made the basic unit of analysis) and is comparative in its mode of analysis. Several top-down maxims that have their origins in economic theory are examined in a bottom-up way, which serves to uncover conceptual and/or implementation problems with each. I furthermore examine growing applications of transaction cost reasoning to business administration and within the social sciences.

Keywords: Transaction cost; Economics; Business; Administration; Real-world; Coase; Barnard; Simon

The relation between economics and business administration is commonly described as one where economics provides the theory that informs the practice. So described, the relation is mainly top–down. The resource allocation paradigm of the microeconomics textbooks, especially the neoclassical theory of the firm, is a central construction.

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Useful though this apparatus has been for many purposes, it operates at a high level of generality, makes limited contact with many of the problems with which students of business administration are concerned, and has often been the source of public policy error. The reasons are as described by Harold Demsetz: it is "a mistake to confuse the firm of [neoclassical] economic theory with its real-world namesake. The chief mission of neoclassical economies is to understand how the price system coordinates the use of resources, not the inner workings of real firms" (1983, p. 377).

As discussed herein, the theory of the firm as governance structure is much more of a bottom–up construction. That is partly because three of the key figures to which this theory traces its origins—Ronald Coase, Chester Barnard, and Herbert Simon—had business training, experience, and/or pedagogical commitment. Not only do the inner workings of real firms matter for each of them, but these inner workings are made the object of analysis.

The paper is developed in four parts.[2] The business background to which I refer above is sketched in Section 1. Hitherto uncontested top down maxims are re-examined with the benefit of transaction cost economics (TCE) in Section 2. Evidence bearing on the proposition that the influence of TCE has been growing, both in general and with respect to business administration, is set out in Section 3 and is borne out by this conference. Concluding remarks follow.

1. Business-based origins

As developed herein, TCE—by which I mean the comparative contractual approach to economic organization in which economizing on transaction costs is treated as the main case—owes many of its good ideas and early development to those who had prior training or experience in business administration and/or were central figures in reforming business education. On my interpretation this was not adventitious. To the contrary, Coase, Barnard, and Simon (CBS) were able to identify lapses in orthodoxy and perceive the needs of a new theory of the firm because their business backgrounds brought them much closer contact with the inner workings of real firms. Rather than focus exclusively on the market—prices and output, supply and demand—CBS were also concerned with identifying and interpreting the properties of and purposes served by hierarchy.

1.1. Ronald Coase and business education

It is uncontested that Ronald Coase had a talent for uncovering lapses in what others regarded as unproblematic.[3] His path-breaking paper on "The Nature of the

[2]This paper is the front end and the back end of a (yet unfinished) longer paper that deals additionally with the operationalization of the transactional approach and the pragmatic methodology out of which it works. Prior discussions of the operationalization and methodology of transaction cost economies can be found in Williamson (2002) and Williamson (2004), respectively.

[3]On this, see Coase (1988, 1992), Douglass North (2000), Lars Werin (2000), Oliver Williamson (2000), and Claude Menard (2000).

Firm'' (1937) is the first and arguably the most important of his challenges to orthodoxy. Coase's training in business administration and field work on vertical integration contributed to his skepticism with orthodox treatments of firm and market organization.

Coase's training in business was, as he tells it, largely a matter of accident: his lack of training in Latin (which stood in the way of an arts degree) and his distaste for mathematics (which precluded a science degree) left working on a commerce degree as ''the only alternative open to me'' (1988, p. 5). He thus studied ''economic history and accounting'' at the University of London before moving on at age eighteen, ''to the London School of Economics (LSE) to continue work for a commerce degree'' (Coase, 1988, p. 5). At LSE he took courses (1988, p. 6):

> …in French, accounting, business administration, works and factory accounting and cost accounts, the raw materials of industry and trade, problems of modern industry, the financing of industry, industrial law, and industrial psychology.
>
> It will be noticed that … I took no courses in economics, and although some of the courses had an economic content, most did not. The courses to which I devoted the most time were those on law, particularly industrial law. I was fascinated by the cases and by legal reasoning…. But it was the teaching of Arnold Plant…, [who] was appointed a professor of Commerce (with special reference to Business Administration) at LSE in 1930 [that had the greatest influence on me at LSE]…. From him I learned that producers maximize profits, that producers compete, and therefore that prices tend to equal costs and the composition of output to be that which consumers value most highly. Plant also explained that governments often served special interests, promoted monopoly rather than competition, and commonly imposed regulations which made matters worse….
>
> Plant gave me my basic approach.

Coase spent the year 1931–1932 on a Cassell traveling fellowship in the United States studying vertical and lateral integration, the choice of which subject ''undoubtedly resulted from the fact that Plant had referred to the different ways in which industries were organized. What stimulated my interest was that we seemed to lack any theory which would explain why those industries were organized in the way they were'' (Coase, 1988, p. 7). Although he met with academic economists, most of his travel was spent visiting businesses and industrial plants in the US (1988, p. 8).

This field work reinforced his skepticism with the prevailing economic theory of firm and market organization, whereupon he resolved to address the puzzle ''What was it that determined whether [to supply a good or service] by contractual arrangements between independent firms or by integration?'' (Coase, 1988, pp. 16–17). The solution upon which he hit ''was to realize that there were costs of making transactions in the market and that it was necessary to incorporate them into the analysis. This was not done in economics at that time—nor, I may add, is it in most present-day economic theory'' (Coase, 1988, pp. 16–17).

Coase's, 1937 article confronted orthodox economics with a logical lapse. Thus whereas orthodoxy took the distribution of economic activity as between firm and market organization as given, whereupon attention was focused on "the economic system as being co-ordinated by the price system" (1937, p. 387), firm and market are properly regarded as "alternative methods of co-ordinating production" (1937, p. 388; emphasis added). Rather than take the distribution of economic activity as given, this should be derived. The 1937 paper thus took as its purpose "to bridge what appears to be a gap in economic theory … We have to explain the basis on which, in practice, this choice between alternatives is effected" (Coase, 1937, p. 389, emphasis added).

Technology (economies of scale and scope) can carry some of the freight, but not much. The more important reason for the unexplained lapse was that the crucial concept of transaction costs had been omitted from the economic calculus. Upon re-examining the make-or-buy decision by the firm in transactional terms, Coase concluded that the, "most obvious cost of 'organizing' production through [market procurement] … is that of discovering what the relevant prices are" (1937, p. 390).

Although the "search cost" savings to which Coase referred do not, without more, survive comparative institutional scrutiny,[4] the prescient insights and good ideas that Coase had advanced were profoundly important and (in conjunction with related good ideas sketched below) provided the entre for the operationalization of TCE 35 years later (Coase, 1992, pp. 716–718). Thomas Kuhn's observation that "almost always the men who achieve… a new paradigm have been either very young or very new to the field whose paradigm they change" (1970, p. 90) is fitting. Coase was both very young and trained in business administration at the time that he wrote his transformative 1937 article. Economics has not been the same since.

1.2. Chester Barnard and business experience

Chester Barnard's extraordinary insights into the mechanisms of and purposes served by internal economic organization were based not on his academic training but on his business experience. It was his good fortune (and ours) that academics recognized that Barnard was onto issues of fundamental importance and provided him with a forum in which to develop them.

Barnard attended Harvard College for three years before leaving (without receiving an undergraduate degree) to take a job as a statistician with AT&T in 1909. He was successively promoted and became the first president of New Jersey Bell

[4]The need to discover the relevant prices sounds plausible but does not survive comparative institutional scrutiny. Thus, if sole-source internal supply enjoys an advantage by using a formulaic accounting price (say of a cost-plus kind) to transfer a good or service from one internal stage to another, thereby avoiding the need to consult the market about prices, then the obvious comparative institutional lesson is to apply this same practice to outside procurement. The firm simply advises its purchasing office to turn a blind eye to the market by placing orders, period by period, with a qualified sole-source external supplier who agrees to sell on cost-plus terms. In that event, firm and market are put on a parity in price discovery respects—which is to say that the price discovery burden that Coase ascribes to the market does not survive comparative institutional scrutiny.

Telephone Company in 1927. Lack of degree notwithstanding, Barnard maintained contact with Harvard and, with the "interest and encouragement given to me … by Dean Wallace B. Donham of the Harvard Graduate School of Business Administration and his associates—Professors Cabot, Henderson, Mayo and Whitehead" (1938, p. vii), prepared eight lectures for the Lowell Institute in Boston in 1937. These were rewritten "about eighteen or twenty times"[5] and published in 1938 as The Functions of the Executive.

Barnard observes in his preface to the book that whereas it seemed to him "probable that there are universal characteristics of organizations," nothing in the literature of which he knew "treated of organization in a way which seemed to correspond … to my experience" (1938, p. viii, emphasis added). Specifically, "sociologists, social psychologists, economists, … scholars in political science and historians," rarely seemed, "to sense the processes of coordination and decision that underlie a large part … of the phenomena they described. Most important, there was lacking much recognition of formal organization as a most important characteristic of social life, and as being the principal structural aspect of society itself" (1938, pp. viii–ix). Thus although Barnard lacked training as a social scientist, his economic intuition and "interested experience" were combined to break new ground and introduce the ambition that a "science of organization" was in prospect (1938, pp. xiv, 290).

As developed elsewhere (in a chapter titled "Chester Barnard and the Incipient Science of Organization" (Williamson, 1990)), key insights that I associate with Barnard are: (1) the proposition that adaptation is the central problem of economic organization; (2) that adaptations within firms are of a cooperative kind and are accomplished in a "conscious, deliberate, purposeful" way through administration; (3) a theory of authority, with emphasis on mutual gain and consent of the governed; (4) requisite flexibility is accomplished by negotiating a cost-effective "zone of acceptance", within which employees are presumed to adapt cooperatively; and (5) informal organization arose spontaneously in conjunction with and as a support for formal organization and furthermore afforded protection for personal integrity. An economy of pecuniary and nonpecuniary incentives was a unifying concept throughout.

Of special interest and importance is the way in which adaptation enters into Barnard's (implicit) theory of firm. Thus although both Friedrich Hayek and Barnard were in agreement that adaptation is the central problem of economic organization, there were also differences. Hayek focused on the adaptations of economic actors who adjusted spontaneously to changes in the market, mainly as signaled by changes in relative prices: Upon looking "at the price system as…a mechanism for communicating information," the marvel of the market resides in "how little the individual participants need to know to be able to take the right action" (1945, pp. 526–527). By contrast, Barnard featured coordinated adaptation among economic actors working through administration (hierarchy). The latter is

[5]From an interview of Barnard conducted by William B. Wolf: Conversations with Chester I. Barnard. ILR Paperback No. 12, January 1973, Cornell University, Ithaca, New York, pp. 15 and 48.

accomplished not spontaneously but in a "conscious, deliberate, purposeful" way (1938, p. 9) and comes into play when the simple market exchanges on which Hayek focused break down.

Accordingly, to the economists' concept of autonomous adaptations in which individual parties respond to market opportunities as signaled by changes in relative prices, Barnard added (introduced) the concept of cooperative adaptations accomplished through administration within the firm. Because a high performance economic system will display adaptive capacities of both kinds, an understanding and appreciation for both markets and hierarchies (rather than the comparative economic systems dichotomy between markets or hierarchies) is needed. The firm for these purposes is described not as a production function (which is a technological construction) but as a governance structure (which is an organizational construction). And the market is described as an alternative mode of governance, well-suited to many transactions but poorly suited to others.

These and other insights of Barnard's were subsequently interpreted and extended by others as a science of organization progressively took shape (Simon, 1947, 1951; Selznick, 1957; March & Simon, 1958; Scott, 1987).

1.3. Herbert Simon and the reform of business education

Herbert Simon received his PhD from the University of Chicago in 1942 in political science. In addition to his, "excellent training in political science," Simon also had a "solid foundation in economics… [and] had made a modest beginning in mathematics," as a result of which he was prepared to do "teaching and research in administration, economics, and even operations research," (Simon, 1991, p. 85)—and much more. Indeed, Simon was to become an interdisciplinary social scientist without compare. He combined extraordinary intelligence with energy, a curious mind, and the ability to address whatever subject to which he applied himself—be it in political science, economics, sociology, organization theory, statistics, philosophy, cognitive science, and the list goes on—on its own terms.

Albeit lacking in business training and experience, Simon had done field work with and for Clarence Ridley on public administration (with whom he co-authored Measuring Municipal Activities (Ridley & Simon, 1938)) and did further work at the University of California, Berkeley as the Director of Administrative Measurement Studies within the Bureau of Public Administration. Furthermore, and crucially, Simon had the benefit of Barnard's Functions of the Executive to work off of in producing his own book on Administrative Behavior (Simon, 1947). Using Barnard's earlier book as a framework, Simon set out to develop more relevant concepts and a more precise vocabulary (1957, p. xiv). Among the important contributions that Simon has made to organization theory are bounded rationality, a focus on microanalytics, a formal theory of employment relation, the architecture of complexity, and subgoal pursuit. All are summarized elsewhere (Williamson, 1990, pp. 178–181).

Also pertinent to Simon's research and teaching and influence on economics was his involvement with the Cowles Commission in the late 1940s. But what I want

especially to emphasize is the significance of his move to the Graduate School of Industrial Organization at Carnegie Tech (now Carnegie-Mellon) in 1949. This involved him in a variety of applied problems in business administration and operations research from 1949 through the early 1960s, when his interest turned more to psychology and cognitive science.

Studies by the Ford Foundation (Gordon & Howell, 1958) and the Carnegie Foundation (Pierson, 1959) speak to the weak status of business education in the 1950s. But for one shining exception, business education was fragmented and lacking in rigor. The exception and the promise for the future was the three-part program—combining economics, organization theory, and operations research—that had been progressively worked up at Carnegie by the faculty at GSIA. The aspiration of this program was to develop a scientific approach to the study of business administration. The Carnegie Triple was this: be disciplined; be interdisciplinary; have an active mind.

To be sure, economics was the gold standard for rigor in the social sciences—then and now. But the Carnegie faculty aspired to rigor more generally and was not intimidated by disciplinary boundaries. Instead, if and as this was needed, the issues were followed across disciplinary boundaries. As against the propensity to self-confidently pronounce (in the spirit of economics) that "this is the law here", Carnegie instead asked the question "What's going on here?"[6] It was my privilege, as a student at Carnegie from 1960 to 1963, to be a part of this project. Jacques Dreze speaks for me and, I believe, for many others by summarizing his Carnegie experience as follows: "Never since have I experienced such intellectual excitement" (1995, p. 123).

A series of efforts to reconceptualize the theory of the firm—including the Behavioral Theory of the Firm (Cyert & March, 1963), managerial theories of the firm (Williamson, 1964), evolutionary theories (Nelson & Winter, 1982), TCE (Williamson, 1975, 1985, 1996), and core competence perspectives—owe their origins to Carnegie in its hey day. In comparison with the neoclassical theory of the firm, all of these theories are genuinely concerned with the inner workings of real firms and, in varying degrees, are more microanalytic, the object being to better "understand the world and to extend the precision and scope with which it has been ordered" (Kuhn, 1970, p. 42).

Focus, of course, is essential: "led by a new paradigm, scientists adopt new instruments and look in new places … [to] see new and different things" (Kuhn, 1970, p. 111). Transaction cost economics employs the lens of contract, rather than the orthodox lens of choice, and subscribes to John R. Commons' view that "the ultimate unit of activity … must contain in itself the three principles of conflict, mutuality, and order. This unit is a transaction" (1932, p. 4). Thus not only does TCE name the transaction as the basic unit of analysis, but governance is the means by which to infuse order, thereby to mitigate conflict and realize mutual gains. These two concepts are then joined by the discriminating hypothesis, to wit: transactions, which differ in their attributes, are aligned with governance structures, which differ

[6]See Ray D'Andrade (1986) and Williamson (2004) for discussions.

in their cost and competence, so as to effect a (mainly) transaction cost economizing match.

The inner workings of firms (and of markets) now come under review and a new theory of economic organization resides therein. As Avinash Dixit puts it (1996, p. 9):

> …the neoclassical theory of production and supply viewed the firm as a profit-maximizing black box. While some useful insights follow from this, it leaves some very important gaps in our understanding and gives us some very misleading ideas about the possibilities of beneficial policy intervention. Economists studying business and industrial organization have long recognized the inadequacy of the neoclassical view of the firm and have developed richer paradigms and models based on the concepts of various kinds of transaction costs. Policy analysis … stands to benefit from … opening the black box and examining the actual workings of the mechanism inside.

The opening to which Dixit refers is accomplished by asking and answering the question "What's going on here?"; and the mechanisms inside are uncovered by examining incomplete contracting in its entirety. Contract implementation issues that are commonly ignored, suppressed, or finessed in price theoretic and agency theory setups are thereby brought under scrutiny.

2. Three examples

The natural problem on which transaction cost economics cut its teeth was the Coasian puzzle of vertical integration (or, in more mundane terms, the make-or-buy decision). As it turned out, the reformulation of vertical integration in comparative contractual (as against price theoretic) terms with emphasis on ex post governance was instructive not merely for understanding vertical integration but had paradigmatic ramifications, in that large numbers of other contractual issues could now be interpreted as variations on a few key transaction cost economizing themes—of which vertical market restrictions, the organization of labor, regulation/deregulation, the uses of debt and equity, corporate governance, franchising, strategic behavior, public bureaus, cooperatives, are examples. More generally, any issue that arises as or can be reconceptualized as a contracting problem can be examined to advantage in TCE terms.

My focus here is on three economics maxims. The argument in each case is that moving beyond proximate reasoning to examine incomplete contracting in its entirety—by which I mean going beyond ex ante incentive alignment to examine contract implementation—is often important, even vital.

2.1. Marginal cost transfer pricing

Blackboard (whiteboard, transparency, Power Point) demonstrations of the efficiency of marginal cost transfer pricing have been known to transform skeptical

students, who initially question the importance of economics in the MBA curriculum, into true believers. Follow-up demonstrations of the efficiency of peak-load pricing are even more transformative.

This is all to the good so long as recent converts also appreciate that marginal cost pricing in theory experiences severe implementation problems in practice. A mental shift of gears from thinking in conventional resource allocation terms to thinking contractually is, however, required to uncover the relevant implementation issues. Both information and incentive problems (which also have informational origins) need to be addressed.

Pertinent in this connection is that TCE eschews reliance on hypothetical ideals and insists instead that comparisons be made among feasible alternatives, all of which are flawed. Specifically, TCE advances the remediableness criterion in assessing proposals to supplant extant procedures by purportedly superior alternatives. The remediableness criterion holds that an extant practice or form of organization for which (1) no superior feasible alternative can be described and (2) implemented with expected net gains is (3) presumed to be efficient. The specific issue that I address here is this: Does the maxim "transfer price on marginal cost terms" withstand scrutiny in feasibility and implementation respects?

There are two key implementation questions. First, can marginal costs be measured objectively (and if not, how does it matter)? Second, what are the ramifications of marginal cost transfer pricing for internal investment renewals and follow-on bidding competition between the incumbent (inside supplier) and outsourcing alternatives?

As is evident from the large literature on predatory pricing (where pricing below marginal costs signifies predation), virtually everyone concedes that accounting cost estimates of marginal costs are arbitrary, hence contestable. Especially in divisionalized firms where divisional performance is based on accounts of divisional profitability, use of arbitrary measures invites contentious advocacy. Better to choose a cost standard (such as average variable cost) that is less malleable, hence less subject to dispute.

But there is an additional problem in transferring product on (purportedly) marginal cost terms. This is that internal supply, once begun, may be difficult to terminate. For one thing, because internal suppliers are at a disadvantage in selling on the market, especially to rivals but also more generally, the requirement that internal supply divisions continuously meet market bids, some at distress prices, is myopic and "unfair." The problem is that a "corrective bias" in favor of internal resupply easily lapses into an uncritical routine, which is reinforced by managers who have a stake in the continuation of internal supply and politick in its favor.[7] Relatedly, because equipment renewals take place piecemeal, rather than all at the same time, true investment renewal costs are apt to be obscured and understated. The upshot is that internal supply, once begun, will be easy to ratify, period by period thereafter—which ease is abetted by the use of marginal cost pricing.

[7]The "horse-trading" to which Chandler refers (1966, p.154) comes into play.

Note that such bureaucratic cost complications—biases, distortions, politicking—nowhere arise within the neoclassical theory of the firm calculus. The implicit neoclassical view is that competition on the merits can be conducted at will without concern for bureaucratic disabilities. That is contested by TCE, which is expressly concerned with the inner workings of real firms, of which the propensity to renew internal procurement, once begun, is one (Williamson, 1985, Chapter 6). Until such time as the bureaucratic failure literature is placed on a parity with the market failure literature, the intertemporal burdens of bureaucracy will be undervalued. TCE therefore counsels that internal procurement be regarded as the organization form of last resort, to be adopted only if and as outsourcing is perceived to experience serious contractual disabilities.

It is elementary that economists (as well as businessmen) need to be apprised of all significant intertemporal regularities whatsoever, whereupon these are factored into the (comparative) contractual calculus. Assessing transfer pricing, on marginal cost or other terms, is no exception. At a minimum, the price theoretic benefits of marginal cost pricing need to be weighed against the behavioral benefits of full cost pricing (to include a fair rate of return on internal investments).[8]

2.2. *Leave no money on the table*

The maxim to "leave no money on the table" has wide application. Perceptive bargainers will leave no money on the table since to do so means that mutual gains have gone unrealized. Because waste is unwise, theories of organization that, implicitly or explicitly, purport to display inefficiency invite scrutiny. What is going on here?

Two such examples are examined below, after which excesses of calculative reasoning are discussed. Transaction cost issues are operative across all three.

2.2.1. *Externalities*

The market failure literature argued that government intervention (often a tax or subsidy) was needed to correct for inefficiencies that had their origins in externalities. That was contested by Coase. Upon reformulating the externality problem in contracting terms, Coase showed that "in a regime of zero transaction costs, an assumption of standard economic theory, negotiations between the parties would lead to these arrangements being made which would maximize wealth and this irrespective of the initial assignment of property rights" (1992, p. 717). In effect, zero transaction cost bargaining would mop up all inefficiencies (no money would be left on the table), whereupon externalities would vanish. The economics profession was stunned.

[8]Two part pricing can, in principle, be used to cover full costs while transferring product on marginal cost terms, thereby realizing allocative efficiency. The practicality of such a theoretical refinement in the context of outsourcing is, however, deeply problematic.

To be sure, property rights would matter upon making appropriate provision for positive transaction costs. A different and deeper understanding of externalities thereby resulted.

2.2.2. Directional integration

A more recent example of economic reasoning that appears to leave money on the table is the Grossman–Hart–Moore theory of vertical integration (Hart, 1995). This theory describes integration between a supply stage (S) and a procurement stage (P) in a three part way: S and P remain independent; S acquires P; P acquires S. Because directional integration is non-cooperative, there is underinvestment in relationship-specific investments in all three ownership configurations (Hart, 1995, pp. 34–49).

Although vertical integration is normally thought of as the unified ownership and operation of successive stages, whereupon interstage cooperation of the conscious, deliberate, purposeful kind to which Barnard referred is accomplished by administration (hierarchy), that is disallowed by the Hart et al. directional integration setup, which assumes that each stage appropriates its own net receipts under all ownership configurations. The resulting underinvestment invites two questions: Are high powered incentives unavoidably compromised when independent stages are integrated? Should high powered incentives be supplanted by low powered incentives under integration?

I examine the first of these elsewhere (Williamson, 1985, pp. 132–140) and conclude that the integration of successive stages unavoidably compromises high powered incentives. Set that aside, however, and consider what happens if, when businessmen like Rudolf Spreckels "see something badly done or not done at all, [they] see an opportunity to make a fortune." In that event, Spreckels (or his ilk) will recognize that the non-cooperativeness on which Hart relies will be relieved by (1) buying a directionally integrated firm, (2) replacing high powered by low powered incentives, and (3) accomplishing cooperation by placing both stages under common direction (hierarchy). To be sure, bureaucratic costs will also appear. Now, however, there are four ownership configurations to be examined: (1) independent S and P; (2) S acquires P; (3) P acquires S; and (4) a boss (B) acquires both S and P and operates them in a cooperative way—a variant of which is that B makes de novo investments in both S and P. It is artificial and incomplete to ignore or suppress this last.[9] Hart and others should either explain why the fourth alternative is not feasible or, if it is feasible, concede that theirs is a special construction that applies only under delimited circumstances (Whinston, 2001, 2003).

2.2.3. Calculative excesses

Efficiency reasoning plainly resides in the maxim "leave no money on the table". But then what to make of the statement once made to me by an investment banker who opined that one of the most important negotiating lessons that he had learned was "always to leave money on the table"? Was he lazy or foolish, or did he know

[9]Hart and Holmstrom, in an unpublished paper on "A Theory of Firm Scope" (2002) begin to move in this direction.

something about bargaining that is not included within the standard economic calculus? When theory and practice collide, should we always condemn the practice or should we be asking the question "What's going on here?"

Like all good things, a problem with the maxim to leave no money on the table is that it can be taken to unreasonable extremes. In the context of incomplete contract, the concern is that meticulous ex ante bargaining can signal non-cooperation during the contract implementation interval—in which event gaps, errors, and omissions in the incomplete contract will often result in contentious disputes.

Such considerations are suppressed by the fiction, in both law and economics, that contracts are well defined and costlessly enforced by well-informed courts. This fiction of legal centralism was disputed by Karl Llewellyn (1931), who perceived the need to move beyond a legal rules conception of contract by making provision for "contract as framework". As Llewellyn put it, the "major importance of legal contract is to provide … a framework which never accurately reflects real working relations, but which provides a rough indication around which such relations vary, an occasional guide in cases of doubt, and a norm of ultimate appeal when the relations cease in fact to work" (1931, pp. 736–737). This last is important, in that recourse to the courts for purposes of ultimate appeal serves to delimit threat positions. But the key idea is this: a legalistic view of contract that is appropos to simple transactions needs to make way for a more managerial conception of contract as complexities build up.

The upshot is that we need to come to terms with the idea of contract laws (plural) rather than a single all-purpose law of contract. In addition, therefore, to court ordering, of the familiar legalistic kind (this is the law here), provision also needs to be made for private ordering, of both formal and informal kinds, to include the "atmospherics" within which a contract is embedded.

Thus although not all transactions are needful of give-and-take, folk wisdom nevertheless has it that "you can settle any dispute if you keep the lawyers and accountants out of it. They just do not understand the give-and-take needed in business" (Macaulay, 1963, p. 61). The advice by economists to leave no money on the table is more in the spirit the legal rules approach to contract—being legalistic (lawyers) and relentlessly calculative (accountants)—rather than with the spirit of contract as framework. Issues that arise in conjunction with of the "economics of atmosphere" (Williamson, 1975, pp. 37–39; 1996, pp. 270–272) are being left out.

What distinguishes the advice to "leave no money on the table" and "always to leave money on the table" is not that the former is hardheaded and the latter is soft. Rather, in circumstances where cooperation during contract implementation is perceived to be important, the former is myopic and the latter is farsighted. That can and should be taught in the classrooms.

2.3. *Executive compensation*

The view that the large corporation is operated in a fat and happy rather than in a lean and disciplined way is often attributed to the lack of performance-based pay for the top management. The 1990s witnessed efforts to introduce higher powered

incentives into the incentive schemes of top-management, sometimes with disastrous results. What went wrong?

One argument is that the high powered incentives recommendation was spot-on correct. The problem is that the message was garbled during translation, hence incorrectly applied. In that event, a message clarification and/or more specific instructions for installing such incentives will suffice. The possibility to which TCE calls attention is that well-intentioned theories often fail in practice because they are used to open doors to implementation abuses, many of which can be discerned by moving beyond ex ante incentive alignment to examine the mechanisms of ex post governance.

Michael Jensen and Kevin Murphy's article on "Performance Pay and Top-Management Incentives" (1990) was an influential stimulus to the performance pay movement. Albeit mainly an empirical paper that documents the absence of performance based pay, the agency theory framework out of which they work "predicts that compensation policy will be designed to give the manager incentives to select and implement actions that increase shareholder wealth" (1990, p. 226). The merits of agency theory notwithstanding, the predictions of the theory are not borne out by the data: "our results are inconsistent with the implications of formal agency model of optimal contracting. The empirical relation between the pay of top-level executives and firm performance … is small for an occupation in which incentive pay is expected to play an important role" (1990, p. 227; emphasis added). This "lack of strong pay-for-performance incentives for CEOs … presents a challenge for social scientists" (1990, p. 262).[10]

Jensen and Murphy appeal to politics, regulation, media criticism, and public ignorance to explain the lack of strong pay-for-performance incentives for CEOs. Without disputing these, I would offer another possibility: the mechanisms of governance for implementing high powered incentives for top executives are inherently weak and are subject to abuse. Out of awareness of these disabilities, top executive compensation was weak by design.

The board of directors, which has the responsibility for naming (or at least approving) top-management appointments and for crafting (or at least approving) executive compensation arrangements, is an obvious governance instrument on which to focus. Because the outside directors have "only limited contact with the CEO—at most 1 or 2 days a month—[at meetings that] are typically held in the CEO's office with agenda and information controlled by him" (1990, p. 251), Jensen and Murphy correctly conclude that the board is a weak monitoring instrument. Indeed, were it otherwise, then "One explanation for the small pay-performance sensitivity is that boards have fairly good information regarding managerial activity, and [can effectively] … monitor managerial input" (Jensen & Murphy, 1990, p. 251). An advantage of their incentive proposal—that "appropriate incentives can be

[10]Jensen and Murphy's "all-inclusive estimate of the pay-performance sensitivity—including compensation, dismissal, and stockholdings—is about $3.25 per $1000 change in shareholder wealth" (1990, pp. 226–227), which value drops to $1.85 per $1000 in the firm (ranked by marked value) in the top half of their sample (1990, p. 227).

generated … by basing compensation on changes in shareholder wealth'' (1990, p. 251; emphasis added)—is that it does not rely on the (counterfactual) assumption that boards are effective monitors.

There are two problems with the proposal. First, it assumes that shareholder wealth is an objective measure, outside the reach of the CEO. Second, it ignores the possibility that arguments favoring high powered incentives of the prescribed kind will be used to support incentive compensation of an administered kind, the purpose and effect of which is to compensate the executives of the corporation more generously with the approval and consent of a compliant board.

It is elementary that the apparent objectivity of shareholder wealth, which is established in the market, will be compromised if the information on which market valuations are based has been massaged by those who stand to benefit from higher valuations. Are the accounting numbers reliable? Have the audits been done responsibly? The hazard here is that accounting and auditing firms that have been hired by the firm in question will approve dubious accounting practices and will not sound alarms when irregularities occur—on the tacit understanding that those who hire them (the top management) and those who are hired have a shared interest in having the corporation appear to ''do well.'' This not to say that there are no limits on what qualify as ''acceptable practices'', merely that the zone of acceptability is large and that choices within the zone are resolved in the management's favor. (To be sure, cumulative distortions will eventually force restatements. But then management succession also occurs. The beneficiaries of incentive compensation move on, and the game begins anew.)

A second, perhaps more widespread problem with high powered incentives is that the top management uses the argument that incentives are ''too weak'' to support the proposition that compensation is ''too low''. In that event, the appropriate response to the observed lack of incentives (due to weakness) is solved by increasing the level of compensation. The (mistaken) idea here is that higher powered incentives mean higher pay.

To be sure, savvy outside board members who sit on the compensation committee will see through such representations. As Lucian Bebchuk and Jesse Fried (2003) make clear, however, these directors are part of the problem. That is because ''Directors generally want to be re-appointed to the board … Besides an attractive salary, a directorship is also likely to provide prestige and valuable business and social connections'' (Bebchuk & Fried, 2003, p. 73).

Being ''elected'' to the board turns crucially on being placed on the company's slate, which is largely decided by the CEO. Accordingly, because ''the CEO's influence over the board gives her significant influence over the nomination process, directors have an incentive to 'go along' with the CEO's pay arrangement…, at least as long as the package remains within the range of what can plausibly be defended and justified,'' (Bebchuk & Fried, 2003, p. 74). In combination with other structural disabilities in the operation of the board (Bebchuk & Fried, 2003), the board is not merely a weak check on but is often a party to compensation abuses.

Given these disabilities, the irony is that the academic literature condemning the weakness of incentive intensity among the top executives in the large corpora-

tion is used to open a door for which it was never intended: increase the level of executive pay. Possibly that is an unforeseeable abuse, but maybe not. The organization theory literature, after all, is rich with examples of unintended consequences (Michels, ([1911] 1962); March & Simon, 1958). Maybe the advocates of performance-based incentives made efforts to look ahead, identify potential hazards, uncover the mechanisms, and fold these back in. If so, they evidently used the wrong lens.

3. Evidence of influence

If TCE is a product of those who brought business training and experience to the study of economic organization, and if many phenomena can be interpreted as the variations on a transaction cost economizing theme, then applications of TCE to and within business education and research should be numerous and growing. Some evidence bearing on both is sketched here.

3.1. Empirical TCE articles

Richard Lipsey's observation that "Theoretical tractability is often preferred to empirical relevance" (2001, p. 169) is borne out in the study of economic organization. Both the theory of the firm (Holmstrom & Tirole, 1989, p. 126) and the field of industrial organization more generally (Peltzman, 1991) have been criticized for their lack of empirical content and testing. TCE is the exception that proves the rule that the empirical testing of most theories of economic organization is rarely contemplated, much less attempted.

Empirical testing was a goal of TCE from the outset. The first such studies were done in the late 1970s. Empirical tests of TCE have grown exponentially since.

A series of recent empirical surveys (relying mainly on American publications but including published studies in Europe, Japan, India, China, Mexico, South America, Australia, New Zealand, and others) discern a remarkable congruity between the theory and evidence (Masten, 1995, p. xi). The first such survey by Howard Shelanski and Peter Klein (1995) has been followed by Bruce Lyons (1996), Keith Crocker and Scott Masten (1996), Arie Rindfleisch and Jan Heide (1997), and Christopher Boerner and Jeffrey Macher (2001). The last records both yearly and cumulative empirical articles on TCE and also splits the annual total into four categories: economics, marketing, finance/accounting, and other (which includes studies in business history, innovation, international business, organizational behavior, and regulation).

As set out in Figs. 1 and 2, the cumulative total exceeded 600 such articles through the year 2000, with "economics" and "other" being the two categories most responsible for the recent growth.[11]

[11] Both figures are from Boerner and Macher (2001).

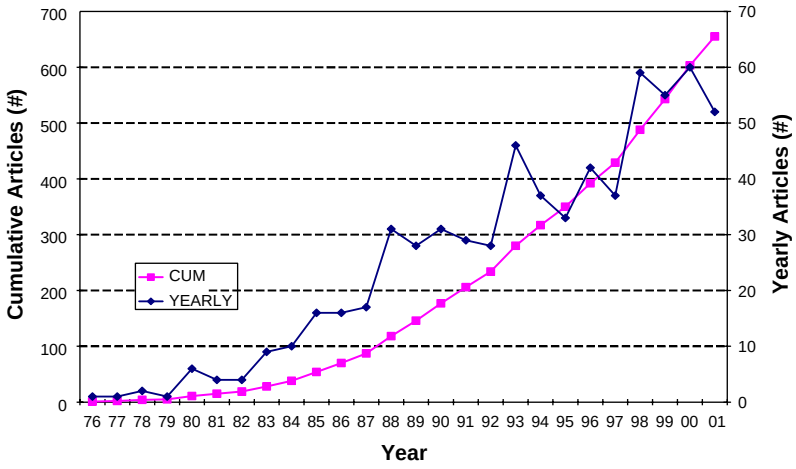

Fig. 1. Cumulative and yearly empirical TCE articles.

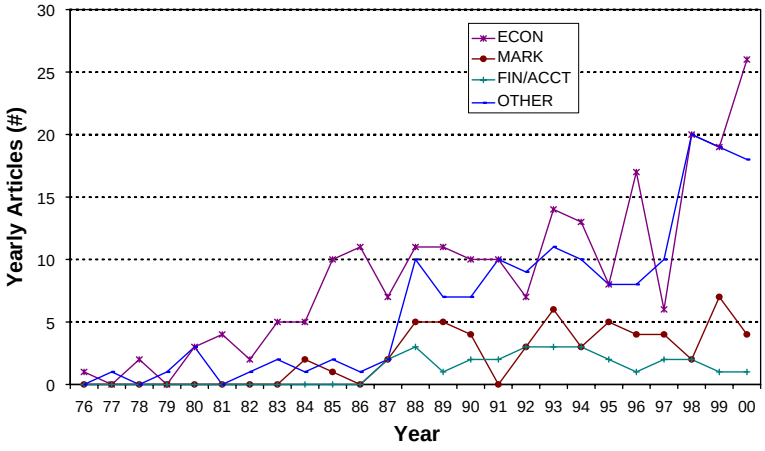

Fig. 2. Yearly empirical TCE articles (by Business Field). Other indicates other business-related fields, including History, Innovation, International Business, OB, and Regulation.

3.2. Citations

Use of citations[12] to examine the growing influence of transaction cost economies is complicated by the fact that there have been so many contributors to this literature. An obvious person to include in any such citation count is Ronald Coase.

[12]The citation counts are from the web of Citation Index for social sciences, Humanities and Natural Sciences.

Inasmuch as I have been working this terrain for over 30 years, I asked my research assistant to do a count of citations to my transaction cost articles as well.

The TCE citation totals reported in Tables 1 and 2 below are an understatement of actual citations but are a good measure of a trend—both in the increase of TCE citations over the interval 1980–2000 and the changing composition of fields in which the citations appear.

Coase's TCE citations grew from 636 in 1981–1985 to 1527 in 1996–2000, a multiple of 2.4, whereas my TCE citations grew from 727 to 3060 between these intervals, a multiple of 4.2. With reference to fields, Coase's citations in law have been large and steady throughout, large and growing in economics, and steadily growing in business, where these three account for 24%, 37% and 16%, respectively, of the 1996–2000 citations to his work. In my case, citations in law figure less prominently (coming in behind sociology and political science), with business and

Table 1
Citations to Coase's TCE work, by discipline over 5-year intervals, 1981–2000

Year	Economics	Business	Law	Sociology	Poli sci	Other	Total
Numbers of citations							
81–85	226	63	239	41	38	29	636
86–90	335	96	293	47	46	32	849
91–95	541	155	326	84	76	116	1298
96–00	569	248	369	117	90	134	1527
Percentages							
81–85	31	9	33	6	5	4	100
86–90	39	11	35	6	5	4	100
91–95	42	12	25	6	6	9	100
96–00	37	16	24	8	6	9	100

Table 2
Citations to Williamson's TCE work, by discipline over 5-year intervals, 1981–2000

Year	Economics	Business	Law	Sociology	Poli sci	Other	Total
Numbers of citations							
81–85	343	188	43	87	32	34	727
86–90	488	419	91	159	76	63	1296
91–95	736	688	146	267	124	169	2130
96–00	759	1203	229	337	237	295	3060
Percentages							
81–85	47	26	6	12	4	5	100
86–90	38	32	7	12	6	5	100
91–95	35	32	7	13	6	8	100
96–00	25	39	7	11	8	10	100

economics being the two leading categories (accounting for 39% and 25% of the 1996–2000 citations, respectively).

The growth in business citations has been especially noteworthy. As a percentage of the total, Coase's citations in the business literature increased from 9% in 1981–1985 to 16% in 1996–2000 whereas mine increased from 26% to 39% over this interval. Adding Coase's citations and mine together, the business literature was responsible for more citations than any other field in 1996–2000. Overall, the citations numbers are supportive of the proposition that TCE resonates with business administration—which is unsurprising given the CBS business origins described in Section 1.

Tables 3 and 4 provide a citation breakdown within business (as grouped into six categories: strategy and general management, organizational behavior, marketing, finance, operations management/information technology management, and

Table 3
Citations in the business literature to Coase's TCE work, by fields over 5-year intervals, 1981–2000

Year	Strategy	OB	Marketing	Finance	OM	Acct	Total
Number of citations							
81–85	31	5	2	5	0	5	48
86–90	51	7	2	6	2	10	78
91–95	79	14	7	11	6	6	123
96–00	118	29	13	15	16	6	197
Percentages							
81–85	66	10	4	10	0	10	100
86–90	65	9	3	8	3	13	100
91–95	64	11	6	9	5	5	100
96–00	60	15	7	8	8	3	100

Table 4
Citations in the business literature to Williamson's TCE work, by fields over 5-year intervals, 1981–2000

Year	Strategy	OB	Marketing	Finance	OM	Acct	Total
Number of citations							
81–85	85	40	20	14	10	19	188
86–90	249	68	34	26	18	25	420
91–95	386	104	69	51	47	31	688
96–00	614	219	123	86	128	33	1203
Percentages							
81–85	45	21	11	7	5	10	100
86–90	59	16	8	6	4	6	100
91–95	56	15	10	7	7	5	100
96–00	51	18	10	7	11	3	100

accounting). For both Coase and myself, the strategy literature is the largest user throughout, accounting for over 50% of the total, with organizational behavior being the category where the second most cites were made in each of the five year intervals for which counts were made. Accounting excepted, the other functional fields (marketing, finance, operations management) have all witnessed steady growth.

These are, to be sure, crude measures of empirical applications (Tables 1 and 2) and of the influence more generally (Tables 3 and 4) of TCE over the period 1980–2000. Crudeness notwithstanding, the publication numbers reveal that empirical work in TCE is large and growing. And the citation numbers likewise support the proposition that, in addition to economics and business administration, TCE has had widespread influence throughout the social sciences.[13]

4. Conclusion

Given the origins of TCE in the path-breaking work of Coase (who was trained in business), Barnard (who was a practicing business executive), and Simon (whose pedagogical ambitions were realized in the transformation of business education), little wonder that TCE relates easily and extensively to business administration. Indeed, TCE is one of the "common languages" that help to unify research across the social sciences in general and the functional areas of business administration in particular.

Of special importance to the TCE enterprise are (1) its plausibility, especially with reference to the description of human actors and mechanisms through which it works, (2) its applied orientation, with emphasis on the governance of contractual relations (including the theory of the firm as governance structure), (3) its intertemporal process orientation, with emphasis on going concerns, (4) its interdisciplinary foundations in law, economics, and organization, and (5) its insistence on refutable implications and empirical testing. Had Moliere been asked he would have told us the obvious: many of us have been examining economic organization in a contractual way without much thinking about it, largely because the contractual approach makes productive contact with so many issues.

As compared with the neoclassical theory of the firm (which is a black box construction), TCE is a much more concerned with actual practice. Partly that is explained by the business interests and backgrounds of the CBS forerunners on which TCE relies for key concepts. Thus Coase, who pointed to logical lapses in orthodoxy and introduced the idea of transaction costs, had business training. Barnard, who viewed the firm as an instrument for adapting to changing circumstances in a conscious, deliberate, purposeful way and made provision for both formal and informal mechanisms of governance, drew on his extensive business experience. And Simon was an interdisciplinary social scientist with pedagogical ambitions to reform business education.

[13]See the forthcoming collection of articles on the New Institutional Economics (Menard, 2005).

Using the crucial concepts introduced by these forerunners and others, a theory of the firm as governance structure, which is an organizational construction that relates to the inner workings of real firms, results. Little wonder that TCE has found widespread use in the business schools.

The TCE theory of the firm as governance structure places special emphasis on the problems that attend ex post governance, which is to be contrasted with other theories of contract that focus on ex ante incentive alignment. Whereas the latter is neglectful of contractual breakdowns in the ex post contract implementation interval, TCE avers that maladaptation during contract execution is where much of the analytical action resides. This entails going beyond the derivation of an "efficient rule" to ask whether this rule will be implemented in the manner intended—by looking ahead, identifying contractual hazards, uncovering the mechanisms, and factoring these into the choice of governance/contractual design. Both the microanalytics of transactions and of governance structures thereby come under scrutiny, broadly in the spirit of John McMillan (2002, p. 225; emphasis added).

> To answer any question about the economy, you need some good theory to organize your thoughts and some facts to ensure that they are on target. You have to look and see how things actually work or do not work. That might seem so trite as not to be worth saying, but assertions about economic matters that are based more on preconceptions than on the specifics of the situation are still regrettably common.

Happily, the regrets to which McMillan refers are becoming less common as more social scientists perceive the need to deal with the phenomena in more veridical terms.

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