

INTEGRATING VARIABLE RISK PREFERENCES, TRUST, AND TRANSACTION COST ECONOMICS

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Transaction cost economics (TCE) relies on three behavioral assumptions in predicting how firms choose governance structures—bounded rationality, opportunism, and risk neutrality. We explore the implications of the neglected behavioral assumption of risk neutrality, offer an integrative appraisal of the three behavioral assumptions using trust as a unifying perspective, and explicate subjective costs and risks. We illustrate the relative ease with which previous empirical shortcomings can be addressed by incorporating risk and trust in TCE models.

Why do firms decide to integrate vertically or to contract in the market? Do the integration decisions of firms have any bearing on whether they survive and prosper? Transaction cost economics (TCE) has made an important contribution to management researchers' understanding of these central questions of the economics of the firm. Despite the importance of its contributions, some fundamental questions about TCE as a theory remain unanswered. Does TCE merely describe firm behaviors, or does it prescribe what managers should do to ensure survival and/or prosperity? What time frame does the theory address? Is it concerned mostly with individual firm behaviors, or does the theory predict market behaviors? What is the role of risk and trust in the model? And does empirical evidence, which shows that two firms faced with similar transaction costs choose different levels of integration, challenge the validity of the theory? This article addresses all of these questions.

TCE, which has experienced a revitalization during the past 20 years, most notably in the work of Williamson (1975, 1985), is a synthesis of economics, law, and organizational theory. In essence, Williamson proposed that if theorists can ascertain the level of asset specificity for a transaction, the frequency of interaction between the parties to it and the degree of uncertainty surrounding it, they can predict the governance

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structure that will be adopted by the parties to the transaction. Underlying this rationale is the central premise that the chosen governance structure will be the one that minimizes transaction costs. Of the three attributes of the transaction, asset specificity has occupied center stage. *Asset specificity* refers to the extent to which assets (e.g., physical, human, or locational) are specialized to a specific transaction and can be used only at lower value in alternative applications. An example of physical asset specificity is the significant investment made by an automobile parts supplier (e.g., Fisher Body in the 1920s) in stamping equipment and molds for automobile bodies that are specialized to the needs of a particular auto manufacturer (e.g., GM in the 1920s) and that have little or no value to other firms (Klein, Crawford, & Alchian, 1978). TCE's contribution lies in the ability its user has to predict the governance structure (market, hybrid, or hierarchy) as a function of the attributes of the transaction. As an example of governance structure, an automobile manufacturer that is building a new assembly plant must decide whether to purchase the parts it needs in the marketplace (market), to manufacture them in house (hierarchy), or to enter into some intermediate form of relationship with suppliers (hybrid); Williamson (1991) described as *hybrid* those intermediate forms that lie on the continuum between market and hierarchy. In sum, TCE focuses attention on the attributes of the transaction, with economizing on transaction costs viewed as the main purpose of economic institutions. The theory also relies on three behavioral assumptions in predicting how firms choose governance structures—opportunism, bounded rationality and risk neutrality (Williamson, 1985).

The predictive validity of the theory has, however, been somewhat undermined by empirical evidence that firms can coexist for extended periods with structures that are apparently "anomalous" (Robins, 1987: 81). A good example of such an anomaly can be found in the 1982 study by Monteverde and Teece, who measured asset specificity as the degree of "specialized, non-patentable know-how" (1982: 206) in the production of parts in the U.S. automobile industry. Their finding that GM and Ford are more likely to vertically integrate at higher levels of asset specificity has been widely acclaimed as providing empirical support for the TCE paradigm.¹ Less satisfactory, from this new institutional economics perspective, is the failure of the theory to predict the significant difference in the level of integration between GM and Ford in the same study. To date, transaction cost theorists have been notably silent in the face of such anomalies; others, however, have been more forthcoming. For instance,

¹ We focus on vertical integration because, as Williamson put it: "Vertical integration is not only an important condition in its own right but equally because the transaction cost treatment of the decision to integrate is paradigmatic" (1985: 13). We suggest, however, that the arguments offered here also may extend to other issues in the TCE literature, such as employment relations and corporate governance.

Robins (1987) used such findings to support his argument that TCE has much more limited scope as a theoretical framework than its proponents would advocate. Thus, such empirical shortcomings, if they remain unexplained, may have far-reaching consequences for TCE.

As the primary contribution of this article, we propose that these apparent limitations of the theory are partly a result of the neglect of the third behavioral assumption of TCE, that of risk neutrality (Williamson, 1985). Although the other behavioral assumptions in the model—opportunism and bounded rationality—have been closely scrutinized, the assumption of risk neutrality has gone virtually unnoticed. The adoption of this assumption has focused the attention of TCE scholars away from the variable risk preferences of transactors. In this article, we use Williamson's (1991) framework to illustrate that incorporating a range of risk preferences (from risk aversion, through risk neutrality, to risk seeking) into the model can help resolve, within the TCE paradigm, many of the apparent contradictions encountered in earlier empirical research.

Furthermore, we propose that isolated treatment of the individual behavioral assumptions of TCE is rendered futile by the interactive nature of bounded rationality, opportunism, and risk neutrality. The important links among these three variables have not been comprehensively appraised. We also undertake what we believe is the first comprehensive and integrative appraisal of these three assumptions. We propose that the social context variable of trust provides a unifying perspective with which to undertake this task.

Finally, we render explicit the important issue of the treatment of economic costs in TCE. We argue that much of the logic of mainstream TCE, including the work of Williamson, ultimately relies on an important but unstated view of economic costs as subjective, a perspective generally associated with the Austrian school of economics. We explore the implications of this subjectivist interpretation of costs and compare and contrast this work with another stream of research within the TCE paradigm in which costs are viewed as objective. In general, we propose that not only can previous inconsistencies in TCE begin to be reconciled when assumptions about costs are rendered explicit, but that different, complementary research streams can readily coexist within the TCE paradigm.

In sum, we examine the implications of relaxing the assumptions of risk neutrality, opportunism, and bounded rationality in the TCE model. Such a relaxation is in keeping with a deductive theorizing approach, in which assumptions that are initially less realistic are relaxed over time, in order to bring greater realism to the model (Camerer, 1985). In essence, we take two commonsense ideas that have been supported by empirical research—that managers have variable risk preferences and that trust and risk are mutually interdependent—and show how they can be incorporated in the TCE model in a way that enhances the predictive validity of the theory. We hope not only to improve the theory but also to move TCE a step closer to being directly useful to managers.

THE TREATMENT OF COSTS IN TRANSACTION COST ECONOMICS

Since its revitalization by Williamson, there has been some debate over the place of TCE in the body of economic theory (e.g., Hill, 1990; Robins, 1987). We propose that there are, in fact, two separate streams of research within TCE, in which research agendas are driven by contrasting views of what is meant by economic costs. These alternative perspectives on costs have led researchers to address different levels of analysis, time frames, and dependent variables. For purposes of this discussion, we label the two streams as *economic natural selection*, which has been adopted by evolutionary theorists, and *managerial choice*, which has been adopted by decision theorists.

The economic natural-selection approach of the evolutionary theorists adopts the population of organizations as the level of analysis, the environment as the primary selection mechanism that utilizes some selection criteria (e.g., transaction cost economizing), the long run as the appropriate time frame, and an ex post objective view of costs. The economic natural selection approach has been adopted by Alchian (1950) and Nelson and Winter (1982), generally, and by Ulrich and Barney (1984) and Hill (1990) with respect to TCE. Ulrich and Barney (1984) argued that population ecology could be treated as a meta-theory, in which transaction cost efficiency represented one possible first-order selection mechanism. From a TCE perspective, Hill argued that "in the long-run, the invisible hand selects actors whose behaviors are biased toward cooperation" (1990: 501). In this framework, organizations that have adopted governance structures that economize on transaction costs are selected by the invisible hand of the market and survive in the long run, regardless of whether the choice of such governance structures was based on transaction-cost-economizing decisions, resource-dependence decisions, imitation of other firms, luck, or any variety of other reasons; those that have not chosen efficient governance structures are deselected and fail. Thus, TCE is a theory about what governance structures we would observe among a population of organizations at the end of a lengthy evolutionary process, in which the economic system reaches the competitive equilibrium. From this perspective, the "anomalous" coexistence of firms that adopt differing governance structures is consistent with TCE because in the short run, disequilibrium prevails, and both efficient and inefficient forms will be observed to coexist.²

The second major body of theory and research in TCE can be described as the managerial-choice approach. This approach to TCE has been adopted by Williamson (1975, 1985) and Walker and Weber (1984), who assumed that managers utilize a transaction-cost-economizing calculus in making contracting decisions. In this view, TCE is a theory about

² We are indebted to consulting editor Charles W. L. Hill for provoking the development of this argument.

the choice of governance structures made by managers faced with given levels of asset specificity, uncertainty, and frequency of interaction. In this article, we seek to build on this body of work. Our arguments provide support for TCE as a theory of managerial decision making by showing that when risk and trust are included in the model, TCE offers a viable explanation for previously confounding empirical evidence.

We propose that the important differences between the evolutionary theorists and the decision theorists are rooted in different assumptions about economic costs.³ The managerial-choice approach to TCE relies on an implicit view of costs as subjective. The concept of subjective costs comes from the Austrian school of economics (e.g., Kirzner, 1986; Pasour, 1991; Vaughn, 1980)—a branch of economics concerned with individual-choice and disequilibrium-market processes. Economic costs are inherently subjective, because different decision makers sacrifice different alternatives at the moment of choice based on different perceptions of and preferences for the alternative opportunities in a world of uncertainty.

Pasour provided an illustrative example of the subjective nature of costs: "Consider the cost to be imputed to (say) land in producing corn. The cost of land in corn is the value of opportunities foregone by using land for corn instead of using land in its best alternative use. Cost by its very nature, however, involves choice, and choice cannot be predetermined and still remain choice. The cost of similar land in corn may well be quite different for Jones and Smith. Jones, for example, may anticipate a return to land of \$30 per acre when using the land for soybeans (the best alternative use). Smith, on the other hand, being more optimistic about future soybean yields or prices, may anticipate a return of \$50 per acre for Jones and \$50 per acre for Smith, even though Jones and Smith pay the same rental price for land" (1991: 283). In this case, the cost of land as it influences entrepreneurial choice is inherently subjective. One can now begin to understand why Jones may choose to plant corn (or GM to build parts in house) and Smith soybeans (or Ford to subcontract parts), even though conventional accounting records might show the same objective cost for each farmer (or automobile firm).

By contrast with the subjective view of costs implicit in the managerial-choice approach, we suggest that the natural-selection approach to TCE relies on an assumption of costs as objective. Thus, in the managerial-choice view, the relevant costs are those that influence choice, whereas in the natural-selection approach the relevant costs are those that result from choice. In the managerial-choice approach, costs involve an *ex ante* evaluation of future outcomes, whereas, in the economic-natural-selection approach, costs involve an *ex post* evaluation of past

³ In particular, economic costs are defined as opportunity costs or the costs of sacrificed alternatives by the decision maker. "This particular concept of costs would seem to be the only one which is of use in the solution of business problems, since it concentrates attention on the alternative courses of action which are open to the businessman" (Coase, 1973: 108).

outcomes. It is only in general equilibrium that subjective costs will equate directly to objective costs, measured using accounting records (Vaughn, 1980).

These differing views of cost provide insight on and reveal the complementarity of the two streams of research in TCE. For example, a governance structure chosen under the uncertainty of disequilibrium to economize on subjective transaction costs at the moment of choice may be judged in error, as having failed to economize on objective transaction costs, when assessed *ex post* by an outside observer. Hence, from the distant, *ex-post* equilibrium perspective of an outside observer, such failures to economize on transaction costs result not in an "optimal level of integration" as TCE would predict, but rather in a "preferred level of integration." However, from an up-close, *ex ante* disequilibrium perspective of an actual decision maker, this choice of governance structure may have, in fact, been based on a transaction-cost-economizing rationale—the best transaction-cost-economizing decision that could be made, given the uncertainty of the moment, hence, resulting in an optimal level of integration as understood at the moment of choice.

In general, the evolutionary theorists view costs as objective and focus their attention on a different research domain from the decision theorists. Evolutionary theorists consider a long-run time frame, in which the market, or population of organizations, is the level of analysis. Because it is the relative economic performance of firms that determines their selection for survival or death, the dependent variable of interest is economic performance. The evolutionary approach is not the primary focus of TCE, according to Williamson, although he acknowledged that "the argument relies in a general, background way on the efficacy of competition to perform a sort between more and less efficient modes and to shift resources in favor of the former . . . The intuition would nevertheless benefit from a more fully developed theory of the selection process" (1985: 22–23).

TCE's decision theorists consider a world in which managers choose governance structures in accordance with a subjective interpretation of transaction costs. As such, the level of analysis is the individual firm, the time frame is relatively short run, and the empirical research focuses on the behaviors of a single firm or a few firms (Monteverde & Teece, 1982; Walker & Weber, 1984). The managerial-choice approach to TCE is, we would suggest, the primary focus of the theory. This is reflected throughout the work of Williamson and is also consistent with the work of Coase, who stated, "There is no one decision which can be considered to maximize profits independently of the attitude of risk-taking of the businessman. A further point is that the correctness of the decision cannot be determined by subsequent events" (1973: 104–105). The importance of understanding managerial decisions is also explicitly recognized by the evolutionary theorists, as reflected in Alchian: "The precise role and na-

ture of purposive behavior in the presence of uncertainty and incomplete information have not been clearly understood or analyzed" (1950: 221).

In sum, this article fits solidly into a stream of literature whose authors have viewed costs as subjective and TCE as a theory of managerial choice. We provide a strong rationale for our interpretation, which is grounded in the mainstream TCE literature of Williamson (1975, 1985) and Walker and Weber (1984) as well as the work of Coase. Furthermore, we argue that development of the TCE paradigm will be enhanced by more explicit recognition of the differing views of costs that underlie the evolutionary- and decision-theoretic applications of the theory. Although our analysis reflects our belief that the subjective view of costs has greater validity, we recognize that parallel research based on the objective view of costs is to a large extent complementary and entirely consistent with the foundations of the theory.

THE TREATMENT OF RISK IN TRANSACTION COST ECONOMICS

The behavioral assumption of risk neutrality has received but sparse attention in the TCE literature to date. Williamson defended his own cursory treatment of the issue (which is relegated to the concluding section of his 1985 book) on the grounds that the focus of TCE is "on the attributes of transactions rather than the risk attitudes of transactors" (1985: 389).⁴ By adopting the simplifying assumption that all transactors are neutral in their attitudes to risk, Williamson argued, attention is firmly focused on the transaction as the unit of analysis. A striking contrast can be observed in the TCE literature between the limited attention afforded the assumption of risk neutrality and the more direct focus on the behavioral assumptions of bounded rationality and opportunism (Hill, 1990; Ring & Van de Ven, 1992; Williamson, 1985). We suggest that there are three important reasons why a closer examination of risk neutrality is called for. First, it differs from the risk-aversion assumption of neoclassical economics. Given that "transaction cost analysis relies on an implicit analogy to neoclassical economics" (Robins, 1987: 70), an explicit

⁴ Two other defenses for adopting the assumption of risk neutrality are offered by Williamson (1985: 389-390). First, he suggested that an assumption of risk neutrality approximates reality and is acceptable when the theory is applied to intermediate product markets wherein owners (not managers) make the governance-structure decisions of their firms. We argue that not only does this impose severe, and ultimately unnecessary, limitations on the application of the theory, but that it is at odds with empirical research in agency theory on the role played by owners in firms' decision-making processes (Eisenhardt, 1989). The third defense, described by Williamson as the "most compelling" (1985: 389), is that a risk-neutrality assumption focuses attention on "core efficiency features" (Williamson, 1985: 389) of organizations that are obscured when behavioral assumptions are relaxed. We illustrate in this article that the important insights offered by TCE on these efficiency features can be illuminated by relaxing the behavioral assumption of risk neutrality.

treatment of the differences in the behavioral assumptions of the two models is a prerequisite for any comparison between them. Second, as discussed next, psychological studies of risk taking in organizational contexts suggest that the assumption of a single risk attitude for a firm may be inadequate and that risk preferences for a single firm vary in a systematic fashion on a spectrum from risk aversion through risk neutrality to risk seeking, influenced by a variety of contextual variables (March & Shapira, 1987). Finally, the governance structure predicted by the TCE model will vary with the risk preference of the firm.

Defining Risk

The task of defining risk has long been fraught with controversy and confusion (Fischhoff, Watson, & Hope, 1990). Although classical decision theory suggests that risk is "the variance of the probability distribution of possible gains and losses associated with a particular alternative" (March & Shapira, 1987: 1404), organizational researchers suggest that this is a poor description of how managers view risk (MacCrimmon & Wehrung, 1986; March & Shapira, 1987). Following MacCrimmon and Wehrung (1986) and Yates and Stone (1992), we treat risk as "the possibility of loss" (1992: 4), a definition that more closely reflects the perspectives of managers in organizations. Importantly, risk is understood as "an inherently subjective construct" (Yates & Stone, 1992: 5), a view also explicitly adopted by MacCrimmon and Wehrung (1986). The definition of risk adopted here is therefore pertinent not only to our treatment of TCE as a theory of organizational decision making, but also it is consistent with our view of costs as subjective.

The difference between risk and uncertainty is important. As Orbell put it: "A decision maker confronts risk when he or she can attach probabilities to alternative states of the world with confidence; from a fair pack of playing cards, for example, a gambler can be confident that there is a 1 in 52 chance of drawing the ace of hearts. A decision maker confronts uncertainty, however, when there is an unknown number of cards and (or) an unknown number of aces of hearts in the deck. Under uncertainty, not only can one still lose but one does not know the odds" (1993: 130). For our purposes, this definition distinguishes between risk (the subjective possibility of loss as perceived by the decision maker) and the notion of uncertainty in TCE, which Williamson described as attributable to exogenous "disturbances" (1985: 58), the origins of which may be behavioral or environmental.

Defining Risk Preferences

What is the difference between an assumption of risk aversion and an assumption of risk neutrality or risk seeking? Because no definition of *risk neutrality* is offered in the TCE literature, we assume that the term is

intended to be interpreted as it is defined in the neoclassical economics literature.

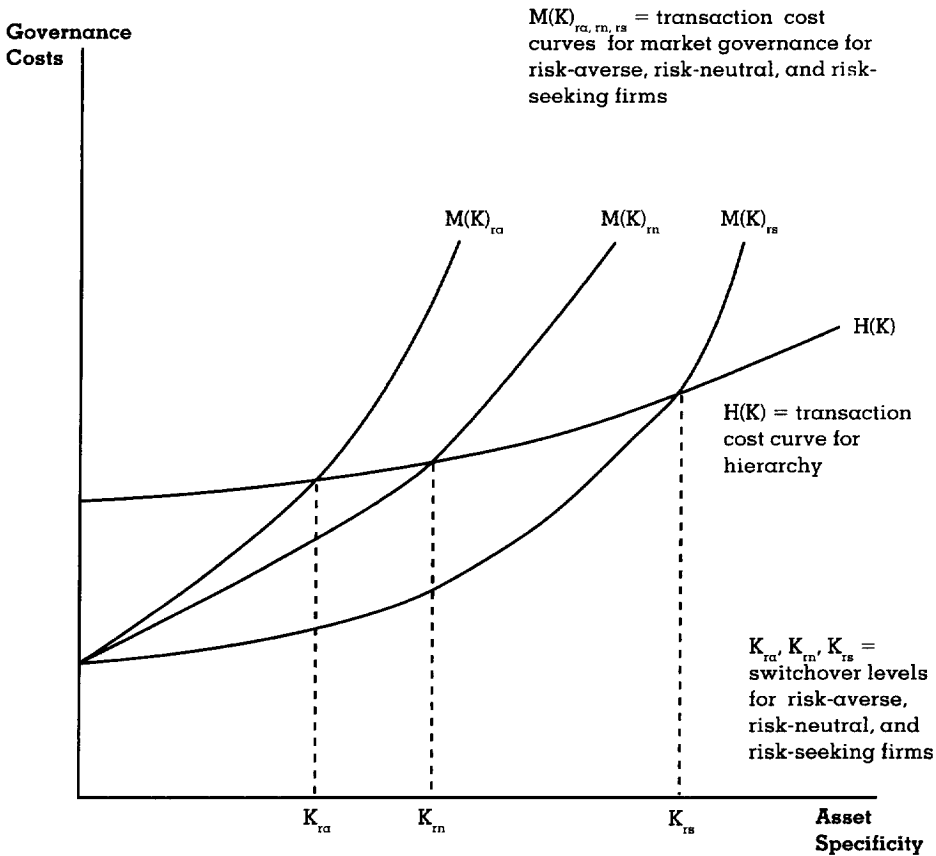
An assumption of risk neutrality suggests that a risk-neutral party is "indifferent between a prospect of uncertain profits and a certain profit, provided that the expected average of the prospective fluctuating profits is equal to the certain profit" (Aoki, 1984: 15). These parties therefore have a linear utility function (Townsend, 1982), which is characterized by constant marginal utility. This assumption can be contrasted with the risk-aversion assumption of neoclassical economics that suggests that a party which is risk averse will always prefer a certain profit to the prospect of fluctuating profits, provided the expected value of the certain profit is not less than the expected average of the prospective profits by more than some positive value. The utility function for risk-averse parties is, therefore, "strictly concave, strictly increasing and continuously differentiable" (Townsend, 1982: 1170). The concept of risk aversion is based on diminishing marginal utility, which "supposes" that the marginal utility of an extra dollar in payoffs declines as more dollars are won. In essence, risk-averse parties will always prefer a certain profit to the prospect of fluctuating profits, whereas risk-neutral parties will be indifferent between the two, provided that their expected values are equal. It should be noted that Williamson's (1985) discussion of risk neutrality compares it with a single alternative assumption of risk aversion. In a more complete conceptualization of the range of possible risk preferences, one must also consider risk seeking, as suggested by prospect theory (Bromiley, 1991; Fiegenbaum & Thomas, 1988; Kahneman & Tversky, 1979). A party that is risk seeking will always prefer a fluctuating profit to the prospect of certain profits, provided the expected average of the fluctuating profit is greater than the expected value of the certain profit. The utility function for risk-seeking parties is therefore convex (i.e., concave-up), increasing, and continuously differentiable—properties that are consistent with increasing marginal utility.

Determinants of Risk Preferences

There is a substantial theoretical and empirical literature on risky behavior that provides insight on what determines risk preferences. Risk preferences are driven by a combination of influences, which have been described as *situational* and *constant* factors (Sitkin & Pablo, 1992). In general, situational factors, such as problem framing (e.g., Kahneman & Tversky, 1979), reference points (e.g., Lopes, 1987; March, 1988), levels of organizational slack (Cyert & March, 1963), and escalation of commitment (Brockner, 1992), have been found to influence risk perceptions. More constant factors, such as individual dispositions (Laughunn, Payne, & Crum, 1980), national culture (Hofstede, 1980), and organizational culture (Morgan, 1986), combine to determine managerial risk preferences. Therefore, a manager's risk preference may vary on a spectrum from risk aversion through risk neutrality to risk seeking, depending on a combination of

influences. In their study, March and Shapira summarized the important findings of this research stream: "[Firms] . . . can show unstable risk-taking behavior in the neighborhood of death, relatively high levels of risk taking when slack resources are large, risk seeking in the neighborhood of a target, a tendency to change risk preference over time with the same resources, and a tendency to underestimate risks as a result of favorable experience with them" (1992: 181).

FIGURE 1
Risk Preference as a Moderator of the Relationship Between Asset Specificity and Governance Cost^b



^a The "switchover" (K_{ra}, K_{rn}, K_{rs}) levels of asset specificity, at which firms are indifferent between market and hierarchy, are determined by the intersection between the transaction cost curves of market and hierarchy. Because the subjective costs of market governance $M(K)$ are determined by the shape of the utility function of the decision maker, the switchover level will vary with the risk preference of the firm.

^b From "Comparative Economic Organization: The Analysis of Discrete Structural Alternatives," by O. E. Williamson, 1991, *Administrative Science Quarterly*, 36: 284. Copyright 1991 by *Administrative Science Quarterly*. Adapted with permission.

Governance Structure Implications of Variable Risk Preferences

Although users of TCE acknowledge that the risk attitudes of managers "for some purposes can be of utmost importance" (Williamson, 1985: 389), the adoption of the assumption of risk neutrality has effectively suppressed these issues in TCE. We suggest that the efficacy of the theory can be enhanced only by an examination of the implications of variable risk preferences for the governance structure predictions of the model. The essence of the TCE perspective on governance structures is captured in a heuristic model by Williamson, which, in a "reduced form analysis" (1991: 282), explores the relationship between governance costs and asset specificity.⁵ The model presented in Figure 1 is based directly on Williamson's model.

In essence, the model offered by Williamson suggests that there is a single level of asset specificity (K_m in Figure 1), which represents the "switchover" point at which firms are indifferent between market and hierarchy as forms of governance. For levels of asset specificity that are below this switchover level, the argument goes, firms will choose market procurement, and for levels above, internal organization will be preferred. As illustrated in Figure 1, the switchover level is determined by the intersection between the transaction-cost curve for market governance and the transaction-cost curve for hierarchy. We argue that the switchover level of asset specificity will vary as a function of the risk preference of the firm. The risk, or possible loss associated with the transaction, will vary with the level of asset specificity of the transaction. As discussed previously, the utility associated with a given level of risk is determined by the shape of the utility function of the firm. Therefore, the shape of the transaction-cost curve for market governance⁶ will vary with the risk preference of the firm. Because the switchover level of asset specificity is determined by the intersection between the transaction-cost curves for market and hierarchy, it will vary with the risk preference of the firm. Thus, the level of asset specificity (K_{ra} in Figure 1) at which a risk-averse firm will prefer hierarchy to market will be lower than that of a risk-

⁵ In his 1991 article, Williamson included hybrid forms of governance in the model. Because inclusion of such forms would unnecessarily complicate the essential argument made here, they are excluded from the illustrations in Figures 1 and 2 in the interests of clarity. Their exclusion does not imply they are irrelevant; we show later that they are relevant, especially for transactions infused with trust. Thus, references to *market* in this article are not limited to spot-market contracts involving little or no asset specificity and anonymous actors. Such references also include long-term contracts across a market interface, which embody elements of hierarchy (Stinchcombe, 1990; Williamson, 1985) and higher levels of asset specificity (Williamson, 1985)—the so-called hybrid form.

⁶ The variance of transaction costs across levels of asset specificity is much greater for costs of market governance than for costs of hierarchy (Williamson, 1985, 1991). Although it could be argued that costs of hierarchy also vary with risk preferences, the effects would be in the same direction but less pronounced. Therefore, we have represented them with a single curve, in order to simplify the model.

neutral firm, (K_{rn}), which, in turn, will be lower than the switchover level for a risk-seeking firm (K_{rs}). The choice of governance structure will vary with the risk preference of the firm. Therefore, we propose

Proposition 1: Risk-seeking firms will continue to transact in the market at higher levels of asset specificity than either risk-neutral or risk-averse firms.

Proposition 2: Risk-averse firms will vertically integrate transactions at lower levels of asset specificity than either risk-neutral or risk-seeking firms.

The failure of authors to define the meaning of risk in TCE has led to some ambiguity in subsequent discussions. For instance, one of three defenses offered by Williamson to justify the use of this assumption is that "if the penalties for incapacity to bear risk are great, parties have strong incentives to craft structures with superior risk-bearing properties" (1985: 389). However, if risk is a subjective phenomenon, these penalties do not apply to risk-neutral actors. Faced with two transactions of unequal returns, a risk-neutral actor will choose the higher return, irrespective of risk, thus avoiding any penalties. The defense offered by Williamson seems to imply a view of risk as an objective feature of the exogenous environment. Following this interpretation, Ring and Van de Ven proposed that "consistent with Williamson . . . the greater the risks in a transaction, the more complex the governance structure, *ceteris paribus*" (1992: 488). This proposition is consistent with Williamson's work, but it is only consistent with an assumption of risk neutrality if risk is an objective phenomenon. The subjective definition of risk adopted in this article is grounded in research on how managers view risk (MacCrimmon & Wehrung, 1986; March & Shapira, 1987), and, therefore, we argue, it is more realistic than the interpretation implied in Williamson's work. We further suggest that a subjective view of risk is more consistent with the subjective view of costs that we have already argued is implicit in mainstream TCE research.

In essence, the assumption of risk neutrality has relegated variable risk preferences to the status of an omitted variable in empirical TCE research to date, thereby reducing the predictive efficacy of the theory. Our examination of risk neutrality in the TCE model suggests that a more realistic assumption—that of variable risk preferences—can be adopted with relative ease and with little threat to parsimony. We have illustrated that when variable risk preferences are incorporated in the model, the switchover level from market to hierarchy for a transaction of a given level of asset specificity, uncertainty, and frequency of interaction will vary, according to those risk preferences.

INTEGRATING THE BEHAVIORAL ASSUMPTIONS OF TCE USING TRUST

We believe that progress in theory development has been impeded by a tendency to treat the behavioral assumptions of TCE as separate and

distinct. This tendency underlies the neglect of risk neutrality and also explains the dearth of attention to the interactive nature of these assumptions. In this section, we use the social-context variable of trust to unify TCE's three behavioral assumptions and illustrate how risk and trust interact to influence the governance-structure predictions of the theory. Trust is chosen for this task because in the literature it is related to each of the behavioral assumptions. The relationship between trust and opportunism has been widely established (e.g., Bradach & Eccles, 1989; Granovetter, 1985; Larson, 1992); the relationship between trust and bounded rationality has received slight attention (Lincoln, 1990; Powell, 1990); and the relationship between trust and risk has just begun to be explored (Ring & Van de Ven, 1992).

Additional justification for incorporating trust into the TCE model comes from calls by proponents *within* the TCE paradigm for its inclusion. Williamson acknowledged that although transaction-cost economizing is the primary focus of TCE, "the costs need to be located in the larger context of which they are a part . . . [including] the social context in which the transactions are embedded" (1985: 22). In this regard, he acknowledged that "trust is important and businessmen rely on it much more extensively than is commonly realized" (Williamson, 1975: 108). Although trust is given passing recognition as an important social context variable, it is not incorporated into the mainstream model of TCE. Williamson (1985: 406) acknowledged both that the difficulties in operationalizing and "unpacking" trust were more the domain of the organization theorist than the economist and that attention to behavioral and governance features that transcend the mainstream model of TCE may be needed. In this section, we attempt to "unpack" trust and incorporate it into the TCE model. By doing so, we begin to relax the assumptions of opportunism and bounded rationality in keeping with a deductive approach to theory building.

A Structured View of Trust

Trust can be defined as increasing one's vulnerability to the risk of opportunistic behavior of one's transaction partner, whose behavior is not under one's control in a situation in which the costs of violating the trust are greater than the benefits of upholding the trust (Zand, 1972). Without vulnerability to the risk of opportunism, there is no need to trust. Some degree of risk must be present so that there is a test of trust (Dasgupta, 1988). *Trust* also may be defined as the expectation that an exchange partner will not engage in opportunistic behavior, even in the face of countervailing short-term incentives (Bradach & Eccles, 1989; Frank, 1993; Orbell, Dawes, & Schwartz-Shea, 1994) and uncertainty about long-term benefits. Both definitions address risk either explicitly or implicitly; thus, trust requires risk. However, what would cause economic actors to increase their vulnerability or to have such expectations? Why would parties to an economic exchange refrain from opportunistic behavior? These questions may be addressed by viewing the conditions that generate trust

through three interpretive lenses—two sociological and one economic in nature (Bradach & Eccles, 1989; Husted, 1989).

First, the conditions that generate trust may be viewed through the interpretive lens of social norms. In this case, "global trust in generalized others" (Butler, 1991: 643) is generated as a result of social norms, such as norms of reciprocity (Gouldner, 1960), norms of obligation and cooperation (Bradach & Eccles, 1989), and norms of fairness (Kahneman, Knetsch, & Thaler, 1986). Such social norms generate shared expectations among people at various societal levels, including the larger society (Gouldner, 1960), regional and local culture, ethnic or religious sectors, industry sectors by way of standard business practices and trade associations, and professional and occupational sectors (Husted, 1989; Zucker, 1986). This view was also expressed by Durkheim, who believed that economic exchange relations were enforced and regulated by "an obligation imposed by society as a whole . . . or . . . by an occupational group of professional practitioners" (cited in Dore, 1983: 471). Thus, it is the honoring of moral obligations inherent in these social norms that generates trust, which, in turn, constrains opportunistic behavior.

Second, the conditions that generate trust may be viewed through the interpretive lens of social embeddedness. In this case, "situational trust in specific others" (Butler, 1991: 643) is generated as a result of personal relations that arise in the course of economic transactions. Macauley (1963) discussed U.S. managers' concern that detailed attention to contracts may have the undesirable consequences of signaling a lack of trust and the damaging of a friendship. Likewise, Granovetter (1985) viewed an economic actor's purposeful behavior as embedded in concrete personal relations and networks of personal relations that generate trust and discourage malfeasance. Similarly, Dore argued that it is a "sense of duty . . . a particular sense of diffuse obligation to the individual trading partner" (1983: 470–471) that generates trust and constrains opportunistic behavior in Japanese relational contracting. Thus, it is the honoring of personal obligations inherent in socially embedded economic transactions that generates trust, which, in turn, constrains opportunistic behavior.

Third, the conditions that generate trust may be viewed through the interpretive lens of rational economics. In this case, "trust-like behavior" (Husted, 1989: 32; Frank, 1993) is generated in a multiperiod prisoners' dilemma game as a result of self-interest-seeking, utility-maximizing individuals making net-present-value calculations, the results of which indicate net benefits to refraining from short-term opportunistic behavior. Game theory has been widely enlisted as a means of explaining such behavior (Axelrod, 1984; Frank, 1993; Heide & Miner, 1992; Hill, 1990; Parkhe, 1993). In a multiperiod prisoners' dilemma, both parties act with the expectation that they may engage each other again. This expectation of future economic relations, known as the "shadow of the future" (Axelrod, 1984: 126), constrains the actors' opportunistic behavior in the current period. Thus, it is a purely economic calculus employed by self-interest-

seeking actors devoid of social norms or social embeddedness that generates this type of trust, which, in turn, constrains opportunistic behavior.

Up to this point, we have employed both attitudinal and behavioral conceptions of trust by using such terms as *trust* and *trust-like behavior*, respectively. This distinction between trust and trusting behavior deserves further comment. Zand (1972) described a spiral reinforcement process, in which one's inner state of trust (mistrust) becomes transformed into behavior that is trusting (mistrusting). In this case, there is a bidirectional link between trust and trusting behavior, in which each reinforces the other, such that they become isomorphic. Following Zand, we take the position that trust and trusting behavior are inseparable.

We have thus far argued (a) that the conditions that generate trust can be viewed through three interpretive lenses and (b) that trust constrains opportunistic behavior. In addition to this direct link between trust and the constraining of opportunistic behavior, this relationship can be mediated by reputation. Reputation is a multidimensional construct. A firm's reputation can be construed as a reputation for reliability (Weigelt & Camerer, 1988), predation (Kreps & Wilson, 1982; Milgrom & Roberts, 1982), quality (Weigelt & Camerer, 1988), tit-for-tat behavior (Buckley & Casson, 1988), honesty (Milgrom & Roberts, 1992), or trustworthiness (Milgrom & Roberts, 1992; Ring & Van de Ven, 1992). A reputation for trustworthiness is an asset in which firms invest by engaging in trustworthy behavior. This asset can be a signal to other actors—both those that have interacted with the party in the past and those that have not—of a party's trustworthiness based on its prior history of trustworthy behavior. Parties possessing such reputational assets would be willing to forego desirable short-term outcomes obtainable through opportunistic behavior in order to protect their valued reputation and the long-term benefits it provides, such as decreased costs of finding and contracting with future exchange partners. Thus, trust can lead to the constraining of opportunistic behavior by way of reputation. As a final note, the link between trust (and, hence, trusting behavior) and reputation for trustworthiness also can be bidirectional and subject to spiral reinforcement processes as described above.

In sum, we have sketched a structured view of trust by using multiple interpretive lenses and shown how reputation effects enter into such a framework. Building on this foundation, we turn next to investigate how trust can serve to integrate all the behavioral assumptions of TCE.

Trust, Opportunism, and Transaction Cost Economics

The behavioral assumption of opportunism holds that individuals are "self-interest seeking with guile" (Williamson, 1985: 47). Importantly, not all actors are assumed to behave opportunistically, but rather some probability exists that any given actor will do so some of the time. The traditional TCE paradigm assumes this probability to increase as investments in specific assets by the other party increase (Hill, 1990). The party making

significant investments in transaction-specific assets is placed at risk of exploitation by the other party as a consequence of the latter's opportunistic behavior. Accordingly, the transaction costs incurred in establishing safeguards for such market transactions can exceed the bureaucratic costs of internal organization, thus occasioning a change in governance structure from market to hierarchy, as illustrated in Figure 1.

Many scholars have critically addressed the assumption of opportunism (Granovetter, 1985; Heide & John, 1992; Hill, 1990; Larson, 1992; Maitland, Bryson, & Van de Ven, 1985) as less than realistic for a wide range of economic exchange relationships, instead viewing such relations as infused with trust rather than opportunism. We concur and argue that trust's role in constraining opportunistic behavior allows parties to adopt less elaborate safeguards, thereby economizing on transaction costs and, in turn, altering the choice of governance structure. In other words, the introduction of trust in the TCE model can alter the efficient boundaries of the firm.

In the face of opportunism, contracts have to be laden with safeguards that are designed to protect each party from the opportunistic behavior of the other. Such safeguards are costly and include costs associated with negotiating, drafting, and monitoring contracts. For contractual relations infused with trust, the risk of opportunism is attenuated, thus reducing the elaborateness and costs associated with contractual safeguards. Trust decreases negotiating costs by fostering a game-type approach to negotiations in which actors are cooperative and quick to come to a resolution rather than a tactical-type approach in which actors are cautious and slow to come to a resolution (R. M. March, 1988). Trust decreases drafting costs by allowing contracts to be specified more loosely with the expectation that any *ex ante* gaps in the contract will be dealt with *ex post* in a fair manner. Trust decreases monitoring costs as a result of each party's confidence in the other's performance, even though short-term incentives may favor opportunism. Trust also decreases the costs associated with more complex safeguards such as bonding, and as noted previously, a party's reputation for trustworthiness decreases the costs of finding an exchange partner. Because the costs associated with contractual safeguards and search are, in fact, transaction costs, trust economizes on transaction costs.

The introduction of trust in the TCE model can shift the comparative costs of governance (as illustrated in Figure 2 by the rightward shift in the family of market governance cost curves) and can alter the choice of governance structures (as noted by the resulting increase in the level of asset specificity at which market governance is preferred relative to bureaucratic governance). As such, inclusion of the social-context variable of trust in the TCE framework will yield a model with greater predictive power.

Transactions involving sufficiently large investments in transaction-specific assets that would conventionally be assigned to a hierarchical

governance structure in the absence of trust may be assigned to a hybrid governance structure in the presence of trust. Hybrid structures entail recurrent, long-term relations between autonomous economic actors where nontrivial specific assets are involved. Ring and Van de Ven explicated recurrent and relational contracting as structures where "trust is the principle mode of social control" (1992: 491)—both are types of hybrid governance structures. Similarly, Helper emphasized "governance by trust" (1990: 153) in contractual relations of a long-term, bilateral nature—also a type of hybrid governance structure. Finally, Granovetter (1985) viewed virtually all economic transactions as embedded in a structure of personal relations. Accordingly, he argued that the neoclassical anonymous market was virtually nonexistent and that a wide range of complex economic transactions could occur across the market interface without resorting to hierarchical governance. For transactions involving long-term relations and social embeddedness, he argued that hybrid governance structures could even be superior to hierarchical governance structures in generating trust and discouraging opportunism.

Trust, Bounded Rationality, and Transaction Cost Economics

TCE utilizes the behavioral assumption of bounded rationality where "human behavior is *intendedly* rational, but only *limitedly* so" (Simon, 1961: xxiv). Hence, the cognitive limitations of human actors are acknowledged. As a result, economic actors do not possess the wits necessary to write comprehensive contracts that account for all possible contingencies. Thus, incomplete contracting occurs.

Furthermore, it is instructive to observe the pairing that exists between bounded rationality and uncertainty/complexity (Williamson, 1975). In the absence of bounded rationality and/or uncertainty/complexity, complete contracting is obtained, and no interesting choices are left to be made regarding governance structures (Williamson, 1975). Bounded rationality is, however, not absent—people are all encumbered by cognitive limits rooted in the human physiological makeup. Importantly, bounds on rationality have salience "only to the extent that the limits of rationality are reached—which is to say, under conditions of uncertainty and/or complexity" (Williamson, 1975: 22). It is bounded rationality *relative* to the uncertainty/complexity of the contracting world that is important with regard to specifying contracts and assessing alternative governance structures (Williamson, 1975). Thus, if one can reduce the level of uncertainty/complexity, then it is said that one has economized on bounded rationality.

We argue that a relationship exists between trust and bounded rationality and that the relationship is mediated by information, influence, and control—a group of variables identified by Zand (1972). Specifically, the existence of trust in a contractual relationship may lead to (a) information exchange that is more accurate, comprehensive, and timely; (b) greater receptivity to influence by others; and (c) relaxation of controls on

others, which, in turn, reduces behavioral uncertainty/complexity (i.e., each party will have greater certainty as to the behavior of the other) (Zand, 1972), which, in turn, "economizes" on bounded rationality. In sum, trust in contractual relations may reduce behavioral uncertainty/complexity, thus rendering bounded rationality less harmful and less salient. Lincoln (1990) and Powell (1990) made similar arguments, though they did not explicate the critical links of information, influence, and control. Lincoln noted that the "rich integration of relations of trust and obligation with business transactions 'economizes' on bounded rationality and uncertainty" (1990: 281). Likewise, Powell proposed that "trust reduces complex realities far more quickly and economically than prediction, authority, or bargaining" (1990: 305).

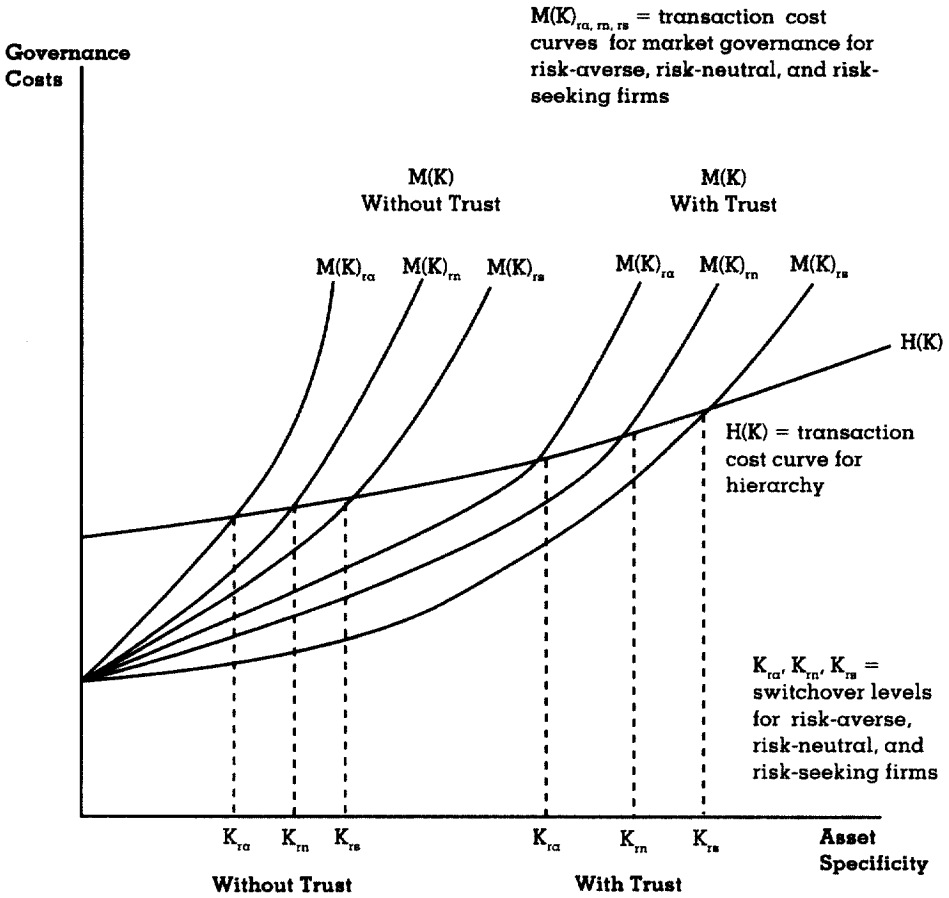
Williamson (1985) noted that bounded rationality concerns not only decision processes as we have dealt with above, but it also concerns governance structures. In particular, Williamson (1975, 1985) noted the importance of devising governance structures that economize on bounded rationality, that is to say, the relative disfavoring of governance structures that "make large demands against cognitive competence" (Williamson, 1985: 46). By rendering bounded rationality less harmful or less salient, trust can cause changes in the comparative efficacy among governance structures. Thus, the introduction of trust in the TCE model can shift the comparative costs of governance (as illustrated in Figure 2 by the rightward shift in the family of market governance cost curves) and can alter the choice of governance structures (as noted by the resulting increase in the level of asset specificity at which market governance is preferred relative to bureaucratic governance).

Trust, Risk, and Transaction Cost Economics

Although a relationship between trust and risk has been established (Ring & Van de Ven, 1992), the complex and interactive nature of this relationship renders causal links difficult to establish. Both trust and risk are, as we have illustrated, subjective concepts embedded in a web of social relationships. As such, the relationship between them is suffused with "the complexities of parallel processing, bidirectional causality and reverberating feedback that characterize both cognitive and social organizations" (McGuire, 1973: 448).

Consider, for instance, how information permeates the relationship among trust, risk, and transaction costs. Risk in this context is the perceived risk that a partner to a transaction that involves asset-specific investments will behave opportunistically, consistent with our definition of risk as the subjective possibility of loss as perceived by the decision maker. First, trust can indirectly affect transaction costs via the need (or lack thereof) to exchange information. If I trust you, I will let you make choices that take my perspective into account; because there is less need for verification of your behavior, information exchange is reduced, leading to lower transaction costs. Conversely, if I do not trust you, I will want

FIGURE 2
Trust and Risk Preference as Moderators of the Effect of Asset Specificity on Governance Cost^b



^a The switchover level of asset specificity will vary according to the risk preference of the firm and the level of trust in the relationship.

^b From "Comparative Economic Organization: The Analysis of Discrete Structural Alternatives," by O. E. Williamson, 1991, *Administrative Science Quarterly*, 36: 284. Copyright 1991 by *Administrative Science Quarterly*. Adapted with permission.

accurate and timely information to verify your behavior, leading to higher transaction costs.⁷ Second, however, trust also can indirectly affect transaction costs in other ways. For example, trust can affect transaction costs via the nature of information that may be exchanged in an economic relationship. Because I trust you, I perceive less risk in divulging rele-

⁷ We wish to thank an anonymous reviewer for pointing out this argument.

vant, comprehensive, accurate, timely (Zand, 1972), or proprietary (Ring & Van de Ven, 1992) information to you and, hence, less need to have elaborate contracts to safeguard my interests and, thus, lower transaction costs. Conversely, if I do not trust you, then I perceive greater risk in divulging such information to you, and I will desire more elaborate contracts to safeguard my interests and, thus, higher transaction costs.

If one considers the multidimensional nature of trust as outlined, and inasmuch as information is but one of three components of risk as seen by managers—the others being time and control (MacCrimmon & Wehrung, 1986)—our discussion reveals something of the complexity of the relationship among trust, risk, and TCE. A complete analysis of this complex relationship is beyond our scope. We can, however, clearly recognize that the subjective risk of any transaction will be influenced by both the risk appetite of the firm's managers and the degree to which the parties trust each other. In other words, the perceived risk of opportunistic behavior by a counterparty to a transaction that involves asset-specific investments will be influenced by the risk preferences of a firm's managers and the level of trust in the relationship.

In concluding this section, we present a model of how risk preferences and trust can be jointly integrated into the mainstream TCE framework. We propose that there are several different levels of asset specificity at which firms will change their preferred governance structure from market to hierarchy, depending on the joint effects of risk and trust. First, as previously illustrated, the utility associated with market governance in a particular firm is a function of the risk preference of the firm. We have already proposed that a risk-averse firm will switch from market to hierarchy at a lower level of asset specificity (K_{ra} in Figure 1) than a risk-neutral firm (K_{rn} in Figure 1) and that the switchover level of asset specificity for a risk-neutral firm will, in turn, be lower than that of a risk-seeking firm (K_{rs} in Figure 1). Second, recognition that transactions are embedded in a social context, in which the level of trust between transacting parties is a critical determinant of the perceived risk of opportunism, leads to the realization that the switchover level of asset specificity will be greater for transactions between parties who trust each other than between opportunistic parties, as illustrated in Figure 2.

Finally, the incorporating of the spectrum of risk preferences into the model and the recognizing of the importance of trust yields a range of predicted governance structures as a function of the risk preferences of the transactors and the social context in which the transaction takes place. The switchover level of asset specificity predicted in the model presented by Williamson (1991) is therefore only one of a number of possible outcomes, representing the relatively narrow case in which firms are risk neutral and behave opportunistically. The switchover level of asset specificity will be determined in part by the risk preference of the firm and the level of trust in the relationship with the counterparty. Figure 2 illustrates an integrated model of trust and risk that shows how they

jointly affect the assignment of governance structures. We suggest that the expanded model presented here is more complete and offers ample scope within the TCE framework to help explain anomalies such as those identified by Robins (1987) and Monteverde and Teece (1982). In short, incorporating risk and trust into the TCE paradigm enhances the explanatory and predictive power of the theory with relatively little loss of parsimony. The following is therefore proposed:

Proposition 3: The switchover level of asset specificity at which firms will choose to structure transactions within the firm rather than in the market will be greater for a risk-averse (risk-neutral, risk-seeking) firm engaged in transactions infused with higher levels of trust than for an equally risk-averse (risk-neutral, risk-seeking) firm engaged in a transaction infused with lower levels of trust.

IMPLICATIONS FOR RESEARCH AND PRACTICE

We have offered a number of propositions from which testable hypotheses can be derived. Moving from the theoretical propositions offered here to empirical research will require researchers to confront a variety of conceptual and measurement issues not yet addressed in this article. The first major empirical issue will concern measurement of both risk and trust. We concur with Eisenhardt, who suggested that "studying risk preferences is particularly opportune because of recent advances in measuring risk preferences" (1989: 70). The works of MacCrimmon and Wehrung (1986) and March and Shapira (1987) provide a base for researchers in this area. Progress also has been made regarding the measurement of trust. Butler (1991), in a review of measurements of trust and conditions of trust, offered the conditions of trust inventory (CTI) as an instrument. Butler's work and that which he reviews should prove valuable to researchers seeking to test the propositions advanced in this article. Some measurement issues posed by our propositions are, however, too complex to be resolved in such a straightforward manner. The risk instruments just described essentially measure managerial attitudes. TCE, in contrast, purports to predict firm behaviors. The further question of the links between these attitudes and firm behaviors also must be addressed.

Variables that moderate the relationship between managerial risk preferences and a firm's risk behaviors must be considered. Three directions are suggested as potentially rewarding. First, agency theorists have identified a number of variables that influence the relationship between the risk preferences of owners and managers (Eisenhardt, 1989). Our proposal that agency theory can be a source of variables for inclusion in TCE models is consistent with Williamson's (1988) view that these theories are complementary. Second, although TCE focuses our attention on choice of governance structure, a firm's risk preferences may manifest themselves

in a variety of other ways. For instance, a firm can choose a highly leveraged financial structure, or it can pursue a more risky strategy as its modus operandi (Miles & Snow, 1978; Williamson, 1988); in employment relationships, spot-market contracting carries risks (for the employer) of opportunistic behavior by employees with idiosyncratic knowledge and skills (Williamson, Wachter, & Harris, 1975), which can be eliminated most effectively by structuring the relationship within the firm. Thus, even managers who are "risk seeking" by disposition may behave in a "risk-averse" manner with respect to choice of governance structures, if they are pursuing risky strategies in financial or other areas. Further research is needed on the role of functional perspective in determining risk preferences (Melone, 1994).

Applying TCE as a theory of managerial decision making relies, we argue, on the treatment of economic costs as subjective costs. This idea also has important research implications. Subjective costs cannot be measured post hoc using accounting data. In a subjective interpretation, the costs that are relevant to the decision are those that are considered in the decision calculus of the decision maker at the moment of decision. In order to measure these subjective transaction costs, researchers must therefore gather data via direct contact with decision makers (Parkhe, 1993). A number of methods can be adopted. The use of mail and telephone questionnaires and face-to-face interviews are well-established research techniques in the social sciences (Judd, Smith, & Kidder, 1991). All of these techniques could be applied to measure subjective costs, but they are vulnerable to the heuristics and biases that distort memory of even important events in people's lives (e.g., Dawes, 1988). We suggest that the use of verbal protocols can more accurately measure subjective transaction costs. Verbal protocols are the taped thought processes of decision makers who think aloud while making a decision. Decisions in verbal protocol studies usually are not "real," but they are scenarios created by the researcher, and they vary on the dimensions of interest. For example, Melone (1994) gathered verbal protocols from a sample of CFOs and VPs of corporations in the food services industry to examine the influence that roles and experience have on the decision processes of corporate executives. Although verbal protocols have some obvious shortcomings as a research technique (e.g., the artificiality of the decision scenario and whether the protocols reflect the true thought processes of the decision maker), they do yield unique insights into the decision calculus used by managers when making decisions. As such, they are eminently suitable for the study of TCE.

A limitation of TCE research to date, both empirical and theoretical, has been the dearth of practical advice for managers that it has produced. We believe that our treatment of the model enhances the realism of the theory because it incorporates realistic assumptions about risk and trust, based on studies of how managers actually treat these issues (e.g., MacCrimmon & Wehrung, 1986). The research methods suggested previously

also can yield useful information for managers. First, we must identify the extent to which a transaction-cost calculus is applied in decision making by managers of different functional backgrounds in a variety of situations (Walker & Weber, 1984). Next, we can examine the outcomes of decisions to determine whether, or in what circumstances, use of a transaction-cost-economizing calculus leads to more economically efficient decisions. Once such information has been gathered, researchers can assess the need for, and potential benefits of, training managers in the conscious use of transaction cost analysis.

Finally, we acknowledge two important limitations of this article. First, TCE, with efficiency analysis at its core, has an important place in the multiparadigm world of organization theory, but to claim that it is the only paradigm would be foolhardy. "[T]here is more to organization theory than economizing on transaction costs . . . [but] efficiency analysis is important to the study of all forms of organizations and is absolutely crucial to the study of commercial organizations" (Williamson & Ouchi, 1981: 367–368). Some alternative explanations for the empirical anomalies described previously include power and resource dependency (Pfeffer & Salancik, 1978; Williamson & Ouchi, 1981), strategy (Eccles, 1987; Williamson, 1991), differential organizational size (Kimberly, 1976), and disequilibrium effects. Referring to these alternatives, Williamson (1985, 1991) and Williamson and Ouchi (1981) invoked the larger context of economic natural selection and argued that such considerations, although sometimes worth acknowledging in the short run, usually give way to efficiency considerations in the long run, especially for profit-making enterprises. Ultimately, the question of which paradigm or alternative explanation is capable of explaining the most variance in governance structures is an empirical one.

Second, we refer to the temporal aspects of both trust and risk. Though we do not address the stability of the trusting relationship, Slovic (1993) argued that trust is fragile, is created slowly, and is destroyed easily. "Thus, once trust is lost, it may take a long time to rebuild it to its former state. In some instances lost trust may never be regained" (Slovic, 1993: 8). The stability over time of economic relations infused with trust may provide a fruitful avenue for future research. A similar argument can be made for risk, as a substantial body of empirical research has demonstrated (e.g., March & Shapira, 1992). The decision-making literature offers important insights on the relationship between time and risk, the implications of which are not fully explored in this article.

CONCLUSIONS

We have argued that many of the perceived shortcomings of the TCE paradigm are in part attributable to the inadequate treatment of risk and trust in earlier empirical and theoretical work. Williamson's adoption of the behavioral assumption of risk neutrality has had the effect of render-

ing TCE silent on one of the fundamental determinants of economic behavior. The social-context variable of trust interacts with all three behavioral assumptions of the TCE model and therefore must be addressed in future treatments. Using Williamson's framework, we have illustrated the relative ease with which risk and trust can be incorporated into the theoretical model. We also uncovered the heretofore implicit assumption in much TCE research that transaction costs are subjective. Finally, we proposed a direction for research in TCE that can yield more practical advice for managers.

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