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**An Empirical Investigation of Ex Post Transaction Costs
in Franchised Distribution Channels**

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ABSTRACT

This study focuses on organizational efforts to constrain ex post transaction costs in interorganizational exchange. The theoretical model frames opportunism as a determinant of transaction costs and implicates cooperation and formalization as control structures that alleviate opportunism. The model also examines whether the proposed theoretical relationships are enduring. Franchisee-franchisor relationships in the Norwegian distribution system of a multinational oil refiner provided the context for analysis. A test of the model using multi-sample data across two time periods indicates that opportunistic behavior consistently increases transaction costs. Furthermore, cooperative interaction curbs bargaining costs and formalization reduces opportunism. Implications for interorganizational theory and franchising management are discussed.

Transaction cost analysis offers compelling logic for evaluating the efficacy of exchange in alternative governance structures. Prior transaction cost research offers substantial insight into the design of governance mechanisms (Williamson 1996b), yet few empirical efforts have examined whether these governance mechanisms influence channel outcomes. If the theory is to be informative to researchers and managers of organizational networks, research must illustrate the extent to which governance mechanisms influence multiple facets of transaction costs.

The goal of this study is to gain an understanding of interorganizational antecedents to transaction costs. The link between organizational control and performance is outlined in transaction cost analysis (Williamson 1990) and control theory (Ouchi 1979), yet empirical research has rarely analyzed the association between organizational control and performance (Rindfleisch and Heide 1997). Eisenhardt (1985) provides evidence to suggest that task programmability, behavioral measures, and costs of outcome-based evaluation foster salaried-based compensation. Anderson (1988) indicates that firms with dedicated investments in volatile markets integrate channel partners to raise efficiency. Similarly, Noordewier, John, and Nevin (1990) illustrate how norms lower logistical costs when environmental uncertainty is high.

In long-term contractual alliances, geographic distance, legal constraints, and local market characteristics often make integration infeasible or undesirable (Brickley and Dark 1987). In addition, integration impairs incentive structures and complicates cost allocations (Williamson 1985). Management must therefore develop other means by which to enhance performance. We illustrate how organizational efforts to alleviate opportunism yield lower transaction costs. Organizational efforts to constrain opportunism have been examined by several authors (e.g., John 1984; Stump and Heide 1996), yet these studies have not considered whether transaction costs are lowered as opportunism is constrained. We frame opportunism as a determinant of multiple facets of transaction costs, and we implicate interfirm cooperation and formalization as control structures that alleviate opportunism. Examination of cooperation underscores interpersonal processes that management should monitor to enhance performance. In addition, analysis of formalization provides insight into action that management can take to raise productivity.

Our analysis of antecedents to transaction costs examines whether the influences of control structures and opportunism are enduring. Transaction cost theory has not characterized how specific relationships develop, and related survey-based research (e.g., John 1984) has relied on data gathered at a single point in time. By contrast, we track relationships in the Norwegian distribution network of a multinational oil refiner over a five-year period. We test the model with an initial data set and also evaluate the theoretical framework with an exact replication (Sawyer and Peter 1983). The design facilitates assessment of static relationships in the model while also evaluating changes in theoretical relationships (Menard 1981). Dynamic mapping of organizational properties provides an opportunity to make strategic interventions with confidence (Kimberly 1976). Nevertheless, longitudinal methods have rarely been incorporated into interfirm research (Anderson 1995).

The paper proceeds as follows. We initially present a model of organizational antecedents to transaction costs. The method and data collection procedures are then described followed by the measures and data analyses. In the final section we discuss implications of our study for interfirm management and research.

MODEL AND HYPOTHESES

Transaction costs are expenditures associated with an economic exchange that vary independently of competitive prices and the product exchanged (Robins 1987). After an agreement is established, parties to a contract face bargaining, monitoring, and maladaptation costs (Williamson 1985, p. 21). Our model (see Figure 1) of antecedents to transaction costs underscores the central importance of opportunism to transaction costs. Opportunism refers to self-interest seeking behavior embodied in calculated efforts to mislead and confuse trading partners (Williamson 1985, p. 47). Most analyses of channel opportunism (e.g., Anderson 1988) focus on the opportunistic inclinations of agents. By contrast, our study addresses the actions of principals. Franchise relationships are subject to moral hazard on the part of the franchisor as

well as the franchisee (Lal 1990), yet research has rarely considered the opportunistic inclinations of franchisors (cf. Agarwal and Lal 1995; Lafontaine 1992). For example, franchisors are opportunistic when they develop national promotional campaigns for products but fail to ship appropriate quantities of the product to franchisees. When franchisees are subjected to franchisor opportunism, higher transaction costs should obtain. Consider how franchisor opportunism influences ex post transaction costs.

Figure 1 about here.

Bargaining Costs. Bargaining costs are expenditures associated with negotiation between transacting parties (Milgrom and Roberts 1991). Environmental contingencies and new market information pose threats to static relationships. Consequently, parties to long-term agreements periodically negotiate to modify contractual terms, add sources of supply, and otherwise enhance contracts. Franchisees establish long-term agreements with franchisors, but bargaining costs are not eliminated due to these contracts. For example, parties to franchise agreements negotiate over order quantities and delivery schedules. Franchisor opportunism should substantially complicate bargaining over these issues. Franchisors with strong inclinations to act opportunistically dedicate considerable efforts to the enhancement of their bargaining positions. Franchisees must devote more energy to the development of proposals that decrease the likelihood that they are subjected to opportunism. Contracts must incorporate sanctions and safeguards that limit the liabilities incurred as a consequence of dealing with opportunistic trading partners. Thus, we hypothesize:

H1: Franchisor opportunism is positively associated with franchisee bargaining costs.

Monitoring costs. These costs are expenditures made to guarantee the fulfillment of contractual obligations. Monitoring costs are incurred to ensure that trading partners act in the best interest of the channel (Lal 1990). For example, petroleum retailers assess the timeliness of franchisor deliveries as well as the quality of products delivered by the franchisor. In franchised systems it is critical to ensure that trading partners do not shirk contractual responsibilities (Fama and Jensen 1983). In oil franchising the franchisee is not granted credit for deliveries of oil-related products and must make payment upon delivery. As a consequence, the dealer dedicates effort to ensure that shipments are accurate and timely. Payment for undelivered goods lowers the franchisee's profitability, and untimely deliveries increase the cost to assess the veracity of shipments. Franchisor opportunism should have a strong influence on these monitoring costs. As the franchisor becomes more prone to miscreant behavior, the franchisee must devise and implement controls to guarantee the fulfillment of contractual obligations. In addition, as the franchisor becomes more devious in interactions with the franchisee, the franchisee is inclined to dedicate more time to oversee shipments and deliveries. Therefore, we offer the following hypothesis:

H2: Franchisor opportunism is positively associated with franchisee monitoring costs.

Maladaptation Costs. These costs are embodied in communication and coordination failures between parties to a contract (Reve 1986). Maladaptation costs arise when the information needed to merchandise and sell products does not accompany deliveries. These costs also accrue when the information is too voluminous or incomplete to be useful to the manager. In contrast to the opportunity costs accrued when decision making is sub-optimal, trading partners incur these costs when they dedicate efforts to ensure that information is complete and accurate (Williamson 1985). For example, the franchisor may have an opportunity to make telephone calling cards available for sale at franchised outlets. The franchisor may offer the products for sale in the retail outlets without

providing the franchisee with instructions regarding the use and sale of the product. The franchisor benefits from incentives associated with a substantial purchase of calling cards, but the franchisee has difficulty selling the product. The franchisee incurs costs due to the opportunistic recommendations of the franchisor. Thus, the following is proposed:

H3: Franchisor opportunism is positively associated with franchisee maladaptation costs.

Our model of antecedents to transaction costs focuses on the mitigating role of opportunism. Although control theory suggests that control structures yield higher marketing performance for organizational sub-units (cf. Ruekert, Walker, and Roering 1985), transaction costs analysis emphasizes the mitigating influence of opportunism. In the absence of opportunism, coordination of exchange can be accomplished largely through self-enforcing general clause agreements. As franchise relationships mature, however, franchisees develop specialized knowledge of local markets and financial power (Llewelyn 1931). These franchisees must safeguard investments from the miscreant behavior of the franchisor (Williamson 1993). Interfirm cooperation and formalization serve as control mechanisms that influence franchisor opportunism. Interfirm cooperation refers the extent to which the principal and agent coordinate strategies for marketing the branded concept in the agent's trade area (Reve 1980)¹. To varying degrees, franchisors and franchisees interact to make decisions regarding advertising, sales campaigns, and store layouts. This interaction is critical to the maintenance and development of the interorganizational relationship (Young and Wilkinson 1989).

Management-initiated, formal control mechanisms operate in conjunction with informal mechanisms to yield desired outcomes (Jaworski 1988). Although franchisees provide input into enhancements of formal policies (cf. Ring and Van de Ven 1994; Bradach 1997), these control structures are crafted by the franchisor. Thus, our model treats formalization as a franchisor-

based mechanism implemented to guide franchisor and franchisee behavior. Formalization refers to the extent to which rules and procedures govern the relationship between interorganizational partners (Van de Ven 1976). Franchised relationships are established via written contracts (Keating 1991), and explicit procedures identify the duties and responsibilities of both parties to the contract. Nevertheless, the extent to which relationships rely on clearly defined routines varies within a distribution network (John 1984; Dwyer and Oh 1987).

Reve and Stern (1986) present alternative hypotheses concerning the role of these control mechanisms. Citing sociological theory of power and dependence (e.g., Emerson 1962; Cook 1977), they maintain that power wielding creates negative sentiments and fosters retaliatory behavior. By contrast, they reference institutional economics (Williamson 1975) to argue that hierarchical organization— notably characterized by cooperation and formalization— fosters convergent expectations and satisfactory trading environments. Reve and Stern's (1986) empirical treatment of cooperation and formalization is largely supportive of the transaction cost framework. Their analysis of Norwegian distribution channels indicates that principals and agents who cooperatively interact to develop market strategies are likely to establish convergent goals (Reve and Stern 1986). When the objectives of franchisor and franchisee are convergent, the likelihood of committing opportunistic acts should diminish (Anderson 1988). Thus, John (1984) and Dwyer and Oh (1987) indicate that participative decision making is negatively associated with opportunism.

Operating policies are developed to ensure that the franchised system is successfully implemented, yet franchises may react positively or negatively to these policies (Stern, El-Ansary, and Coughlan 1996). The rationale from power and dependence theory, which suggests that the wielding of power encourages retaliation, is supported by research by John (1984) and Provan and Skinner (1989). In both of these studies formalization was found to enhance

opportunism. By contrast, the transaction cost notion that hierarchical control enhances the trading atmosphere is supported by Dwyer and Oh's (1987) research in automobile channels.

To gain an understanding of the influence of formalization on opportunism one must consider the nature of formalization in the channel. Scott (1987, p. 33) maintains that formalization refers to the degree to which rules prescribing behavior are formulated *as well as* the extent to which role responsibilities are prescribed. Directives that explicitly identify appropriate interfirm behaviors tend to exacerbate the level of opportunism. For example, John (1984) suggests that franchisor-induced procedures lead to erosion of the relationship and result in higher levels of agent opportunism (cf. Provan and Skinner 1989). By contrast, formalization that identifies complementary tasks and responsibilities should illuminate the convergent goals of exchange partners (cf. Gupta, Raj, and Wilemon 1987). Consistent with this perspective, Dwyer and Oh (1987) maintain that formalization of responsibility guards against the capricious mobilization of power. Specific descriptions of obligations highlight the complementary responsibilities and objectives of buyers and sellers (Reve 1980). Formal policies that recognize complementary responsibilities should make opportunism less desirable. Therefore, the following are proposed:

H4a: Interfirm cooperation is negatively associated with franchisor opportunism.

H4b: Formalized procedures and role responsibilities are negatively associated with franchisor opportunism.

Temporal Constraints on Theoretical Relationships

Transaction costs analysis recognizes that the pursuit of efficiency is a dynamic process that evolves over multiple periods of interaction. Nevertheless, theory has not explicated how specific theoretical relationships emerge over time. In this section we offer preliminary hypotheses that examine whether the relationships outlined in H1-H4 are enduring. Our analysis of time-based

constraints presumes stability of marketplace conditions (Duncan 1972; Lawrence and Lorsch 1986).

Bargaining Costs. Negotiation research provides insight into the on-going influence of franchisor opportunism on bargaining costs. Laboratory experiments involving repeated negotiation indicate that individuals who consistently bear the consequences of opportunism begin to recognize the direction the interaction is taking (Rubin and Brown 1975). These individuals begin to favor competitive interaction over mutual problem solving (Pruitt 1981). Consequently, the level of opportunism escalates (Pruitt and Rubin 1986), and the returns from the interaction degrade (Axelrod 1984). Franchise litigation also supports an on-going relationship between opportunism and bargaining costs. For example, in *Eastridge vs. Shell Oil Company* (1985), the franchisor acted with malfeasance when it refused to accept a qualified potential buyer of a service station. The franchisee consequently made eleven additional attempts to sell the station to prospective franchisees. The franchisor's pattern of opportunism had an enduring influence on the franchisee's bargaining costs. Similar results should obtain in franchise relationships that have not escalated to litigation. Franchisees that interact with miscreant franchisors yield less effective bargaining sessions and dedicate efforts to ensure that negotiation sessions are productive. By contrast, trading partners that develop positive bonds establish a mutual problem-solving environment in which it is less necessary to ensure that appropriate returns accrue. When divergence of goals and opportunism are consistently low, on-going bargaining costs should also be low (Pratt and Zeckhauser 1985). Therefore, the following is proposed:

H5: Franchisor opportunism has an enduring positive influence on franchisee bargaining costs.

Monitoring Costs. Prolonged interaction provides the opportunity to assess whether a trading partner's action has jeopardized performance (Arrow 1985). Consistent interaction with

opportunistic trading partners yields poor performance, and measures must be put in place to constrain trading partners from acting opportunistically (Radner 1981). Trading partners that consistently commit miscreant acts develop reputations for opportunism, and corrective measures are implemented to monitor the action of the trading partner (Wilson 1985). For example, in *Brown vs. Gillen* (1989), Brown established a reputation for malfeasance through untimely deliveries of gasoline, negligent repairs of facilities, and overcharges for petroleum products. Consequently, Gillen incurred substantial costs to maintain operations of the retail service station. Consistent supplier opportunism results in on-going efforts to monitor the exchange relationship. Therefore, the following is proposed:

H6: Franchisor opportunism has an enduring positive influence on franchisee monitoring costs.

Maladaptation Costs. Individuals that interact with deceptive channel partners continue to incur costs associated with the untimely and confusing presentation of information. The initial recognition of opportunism necessitates expenditures to ensure that interfirm communications have been accurate and complete (Milgrom and Roberts 1990). Trading partners that have been the target of opportunism cannot ignore the history of the relationships, and they must devise mechanisms to evaluate whether future communications are timely and complete (Aoki 1994). For example, Jiffy-Lube established a program in which fleet customers paid the franchisor for services rendered at franchisee outlets (*Jiffy-Lube vs. Weiss Brothers* 1993). The franchisor compensated the franchisee in the form of credits after deducting for royalties and processing costs. Franchisees viewed the franchisor's mechanisms for determining credits as opportunistic. Moreover, the franchisees incurred on-going costs associated with the poor formulation and untimely reporting of credit information. Franchisor opportunism had an enduring influence on

the franchisees' costs to acquire and assess timely interfirm communications. Thus, the following is proposed:

H7: Franchisor opportunism has an enduring positive influence on franchisee maladaptation costs.

Opportunism. Control structures enable trading partners to constrain the level of opportunism operating in a channel. On-going cooperation coalesces the objectives of buyer and seller and establishes an environment in which neither party benefits from opportunism (cf. Commons 1990). For example, over several decades A.O. Smith and General Motors have worked together to design and test auto body frames, re-tool production facilities, and train employees (Coase 1988). Many facets of the relationship are not governed by formal agreements, yet the on-going interaction enables the firms to constrain opportunism. Similarly, Bradach (1997) indicates that cooperative interaction enables management of quick-service restaurant systems to hold in check the number of violations to the interfirm agreement. On-going cooperation underscores the value of the relationship and thus makes opportunism less likely.

Consistent emphasis on rules and procedures should also have an enduring effect on opportunism. Formal procedures developed in prior periods establish expected activities among participants to an exchange (Commons 1990). Thus, Pittman's (1991) analysis of rail contracts indicates that contractual responsibilities and obligations ensure that neither rail shippers nor railroads are subjected to opportunism from their respective partners. Successive attempts to delineate and refine role obligations should continually discourage opportunism (Milgrom and Roberts 1990). For example, a franchise system may receive quantity rebates from a vendor. The franchisor's failure to pass these savings on to franchisees is viewed as an act of malfeasance. Franchisees will initially request policies to ensure payment, but over time these directives become more detailed in their specification of rebate periods, order quantities, return policies, and

reimbursement schedules for franchisor payments. Formal policies are continually implemented and refined in order to constrain opportunism. Therefore, the following are proposed:

H8a: Interfirm cooperation has an enduring negative influence on franchisor opportunism.

H8b: Formal rules and procedures have an enduring negative influence on franchisor opportunism.

METHOD

Empirical Context

The empirical setting for this research is the Norwegian oil industry. Our hypotheses are developed under the assumption that the market is relatively stable over the 1990-1994 period. Industrial conditions and macro-market factors derived from records of the Norwegian Petroleum Institute (e.g., Norsk Petroleuminstitutt 1995) and the Norwegian Bureau of Statistics (Statistisk Sentralbyrå 1995) indicate that energy production and petroleum prices are stable over the period². The macro-market conditions are also suggestive of a slow-growing economy. Over the 1990-1994 period the inflation and unemployment rates are relatively low and stable. The GNP growth rate and surplus supply of goods and services are also relatively stable and increasing.

Sampling Procedure and Data Collection

Our sampling frame was the Norwegian distribution network of a multinational oil company. The first data set was collected in 1990. We mailed surveys to 299 retailers and received 179 completed responses (61% response rate). We also sent surveys to the refiner's area sales managers responsible for coordinating activities with the retailers. The refiner employed twenty-three area sales managers to monitor franchisee operations in Norway. Because each manager supervised the operations of ten to twenty stations in the network, it was not feasible for them to report on each station. Seventy-five service stations were selected at

random for analysis, and area sales managers provided data on 72 outlets (96% response rate). The follow-up data were collected in 1994 in the same distribution network. Two hundred sixteen responses were received from the 432 managers (50% response rate) in the network.

The sampling procedure was uniform for the two data collection periods. Mail surveys were sent to the retail managers along with appeals for participation from the refiner, the retail managers' union, and the project leader. The managers received two telephone calls requesting their participation in the study. In both phases of data collection comparisons were made between early and late responses on ancillary issues (e.g., retail experience) and all constructs in the model (Armstrong and Overton 1977). None of the tests was significant, which suggests that non-response is not an issue.

Measure Development

Measure development was based on the procedure outlined by Churchill (1979) and updated by Gerbing and Anderson (1988). Items were generated based on four interviews with officials in the distribution network (2 retail managers, 1 area sales manager, and the corporate distribution manager) and reviews of related distribution literature. A pre-test of the survey instrument was then administered to five retail managers. The pilot study confirmed that retail managers were appropriate informants for the study and also indicated that secondary informants were not available at retail sites. Although multiple informants facilitate isolation of informant bias (Kumar, Stern, and Anderson 1993), multiple informants were not available in this setting.

Consistent with the dyadic approach developed by Anderson and Weitz (1992), we used parallel wording for the retailer and sales manager reports. For example, the English translation of one formalization measure for the retailer survey read "There is no clear distribution of tasks between us and (the refiner)." The complementary item from the area sales manager instrument

read “There is no clear distribution of tasks between us and the dealer.” Coefficient alpha, item-to-total correlation analysis, and exploratory factor analysis were used to purify the scales. The factor analysis procedure was estimated using matched dyads (n=72) from the retailer and sales manager reports in the 1990 data. Items were eliminated from both surveys that did not load properly in either factor analytic procedure. With the exception of the formalization scale ($\alpha = .63$) most scales exceed the acceptance criterion for basic research (Nunnally 1978). Although the bivariate correlation coefficient for the follow-up measure of bargaining costs is modest (.65), it parallels prior two-item measures in channels research (e.g., Dant and Schul 1992).

Measures

Bargaining Costs. This construct refers to franchisee perceptions of the extent to which negotiations are systematic and effective (Milgrom and Roberts 1991). A two-item Likert-type scale was developed to address this issue.

Monitoring costs. These costs refer to franchisee expenditures of time and other resources necessary to assess the quality and quantity of deliveries from the refiner to retailer. This cost factor was measured via three Likert-type items.

Maladaptation Costs. Maladaptation costs are expenses associated with deciphering information provided by a trading partner (Reve 1986). A three-item Likert-type scale addressed this issue.

Interfirm cooperation. Cooperation refers the extent to which principal and agent coordinate strategies for marketing the branded concept in the agent’s trade area (Reve 1980). Five Likert-type items were adapted from Reve and Stern’s (1986) measure of vertical interaction.

Formalization. Formalization addresses the extent to which fixed policies and established role responsibilities govern the interfirm relationship. The three Likert-type items measuring this construct are derived from prior interfirm research (Dwyer and Welsh 1985; Reve 1986).

Opportunism. Opportunism refers to self-interest seeking behavior characterized by calculated efforts to mislead and confuse trading partners (Williamson 1985). A two-item Likert-type scale was constructed from prior operationalizations by Anderson (1988) and John (1984).

Construct Validity

The two-step approach developed by Anderson and Gerbing (1982, 1988) was employed to assess the factor structure of the measures and theoretical relationships. This procedure affords the opportunity to assess the factor structure across populations and also facilitates the assessment of commonalities in structural parameters for multiple samples (Anderson 1987). The items were subjected to confirmatory factor analysis via EQS/Windows (Bentler and Wu 1993). We confined our analysis to retailers that participated in the 1990 and 1994 surveys. We estimated separate measurement models for the initial sample (n=117), and the follow-up study (n = 117). No items were deleted on the basis of the confirmatory factor analyses.

We assessed discriminant validity by estimating a model with all measures set to load on the appropriate traits and allowing the traits to correlate. This model was compared with a series of models in which intertrait correlation was set to unity. In each case discriminability was evidenced by a statistically significant chi-square difference between the models. For example, the test of discrimination between monitoring and maladaptation costs is statistically significant for the initial sample (1990 ($\chi^2(1) = 5.156, p < .05$) and the follow-up study ($\chi^2(1) = 6.296, p < .05$).

We analyzed a series of models that examined the covariance structures between the initial and follow-up data sets (Bentler 1993). The initial test examined whether the covariance matrices are equivalent. Results of this test indicate that the null hypothesis (i.e., that the data sets are equivalent) should be rejected ($\chi^2(171) = 224.046, p < .05$)³. We subsequently

investigated whether the factor loadings for the initial and follow-up study were equivalent. The results presented in the measurement appendix indicate that the factor loadings do not significantly vary between data sets. The final invariance test for the measurement model indicates that the factor variance structures and covariances are equivalent ($\chi^2(579) = 766.828, p < .05$). Together these validity assessments suggest that the data are of acceptable quality to test the hypotheses. The correlation matrices and descriptive statistics are provided in Table 1.

TESTS OF HYPOTHESES

Analysis of the structural relationships was performed independently for the initial data set and the follow-up study. In each case the Anderson and Gerbing (1988) decision framework was employed⁴. This framework enables the researcher to compare the theoretical model with a series of alternative structural patterns ranging from the null model to a fully saturated model. Our theoretical model is intended to reflect the mitigating role of opportunism characterized in Williamson's (1985) transaction cost framework. Thus, we treat opportunism as antecedent to transaction costs and control structures as determinants of opportunism. By contrast, marketing control theory (Jaworski 1988; Ruekert *et al.* 1985) suggests that control structures can directly influence channel outcomes. We compared our theoretical model with models that introduce a direct association between control structures and outcomes. The theoretical model for the initial data set offers a relatively poor fit ($\chi^2(126) = 156.604; p < .05; CFI = .950$). Sequential chi-square difference tests were employed to compare the explanatory power of this model to rival models⁵. These tests suggest inclusion of a path from cooperation to bargaining costs ($\chi^2(1) = 10.535; p < .05$) and deletion of the path between cooperation and opportunism ($\chi^2(1) = 0.119; p = n.s.$) in the model for the initial data set. Although the model that eliminates this second relationship is more parsimonious, the path is retained to facilitate invariance testing. Sequential chi-square difference

tests also indicate the inclusion of a path between cooperation and bargaining costs ($\chi^2(1) = 12.065$; $p < .05$) and formalization and maladaptation costs ($\chi^2(1) = 7.395$; $p < .05$) in the model of the 1994 data set. The modified models provide more acceptable fit statistics for the initial ($\chi^2(125) = 146.069$; $p > .05$; CFI = .965) and follow-up data sets ($\chi^2(124) = 143.987$; $p > .05$; CFI = .976). The model parameters are provided in Table 2.

Tables 1 & 2 about here.

H1-H3 addressed the influence of opportunism on ex post transaction costs. Opportunism increases bargaining costs in the 1990 sample ($\beta_{14} = .544$, $T = 3.939$, $p < .05$) as well as in the 1994 sample ($\beta_{14} = .503$, $T = 3.672$, $p < .05$). Thus, H1 is supported. H2 is also supported given that opportunism raises monitoring costs in the initial ($\beta_{24} = .449$, $T = 2.993$, $p < .05$), and the follow-up studies ($\beta_{24} = .406$, $T = 2.809$, $p < .05$). Consistent with H3, opportunism influences maladaptation costs in the 1990 ($\beta_{34} = .491$, $T = 3.825$, $p < .05$) and 1994 samples ($\beta_{34} = .305$, $T = 2.330$, $p < .05$).

The theoretical model was developed under the assumption that opportunism mediates the relationship between control structures and transaction costs. Nevertheless, interfirm cooperation lowers bargaining (H1') in the initial ($\beta = -.363$, $T = -3.238$, $p < .05$) and follow-up studies ($\beta = -.412$, $T = -3.695$, $p < .05$). Cooperative interaction evidently enables trading partners to establish dialogue. As a result, contingencies are expressed, and less time is dedicated to negotiations. Formalization also has a direct effect on maladaptation costs (H3') in the follow-up study ($\beta = -.344$, $T = -2.679$, $p < .05$). Prescribed role responsibilities seem to underscore the importance of timely communication and result in lower costs to decipher corporate communications.

H4 suggested that control structures reduce opportunism. Cooperation lowers opportunism in the follow-up sample ($\gamma_{41} = -.339$, $T = -2.919$, $p < .05$), yet it does not influence opportunism in the initial study ($\gamma_{41} = .042$, $T = 0.278$, $p < .05$). By contrast, formalization constrains opportunism for the initial ($\gamma_{42} = -.722$, $T = -3.108$, $p < .05$) and follow-up studies ($\gamma_{42} = -.349$, $T = -2.663$, $p < .05$).

The temporal constraints on the theoretical relationships were analyzed in a model that constrained common regression paths between the 1990 and 1994 covariance matrices (cf. Anderson and Narus 1990). Consistent with H5-H7, opportunism has an invariant influence on bargaining ($\chi^2 = 0.377$, d.f. = 1; $p > .05$), monitoring ($\chi^2 = 0.063$, d.f. = 1; $p > .05$), and maladaptation costs ($\chi^2 = 0.051$, d.f. = 1; $p > .05$). Although the influence of cooperation on opportunism is not significant in both phases of data collection, the two estimates are statistically invariant ($\chi^2 = 1.394$, d.f. = 1; $p > .05$). The influence of formalization on opportunism is consistently negative throughout the analysis ($\chi^2 = 1.138$, d.f. = 1; $p > .05$). Thus, H8a and H8b are supported. In addition, the negative influence of interfirm cooperation on bargaining costs is invariant across samples ($\chi^2 = 0.111$, d.f. = 1; $p > .05$)⁶.

DISCUSSION

Implications for Interorganizational Research

Transaction cost analysis presumes that specific assets raise the prospect of opportunism, and it is this heightened prospect that raises transaction costs (Demsetz 1993). Although this relationship is a fundamental premise of transaction cost theory, transaction costs have rarely been the focus of research (Milgrom and Roberts 1991). Masten et al. (1991) offer evidence to suggest that operational costs vary with the form of exchange, and Agarwal and Lal (1995) indicate that monitoring costs influence the frequency of monitoring franchises. Our study augments these efforts by providing empirically tested measures of multiple facets of transaction costs. Moreover, we provide evidence

that opportunism has a lingering effect on transaction costs, and we illustrate how formalized procedures can be employed to reduce opportunism. Recent critiques of transaction cost analysis (e.g., Ghoshal and Moran 1996) question whether control mechanisms constrain opportunistic inclinations. By contrast, we indicate that organizational structures can lower opportunism. Importantly, we suggest that it is the nature of the structure— and not merely structure itself— that leads to desired channel behaviors. Formal policies evidently have greater merit when they outline the distribution of tasks as well as operating procedures. The implication is not to abandon research that addresses organizational attempts to constrain opportunism. On the contrary, research should seek to refine our understanding of organizational properties that foster productive interfirm alliances.

Williamson's (1996a) presentation of transaction cost analysis frames opportunism as a self-interest seeking behavior that mitigates efforts to influence organizational outcomes. Our treatment of formalization is supportive of transaction cost predictions, yet it also suggests a direct relationship between formalization and maladaptation costs. The findings also indicate a direct relationship between cooperation and bargaining costs that is not mitigated by opportunism. This relationship is consistent with control perspectives (e.g. Dalton and Lawrence 1971) linking informal controls to organizational outcomes. These results underscore the need to augment transaction cost research with rationale from related theories. Integration of transaction cost logic with complementary perspectives should be informative to interfirm research and management.

Our study underscores the benefits of longitudinal research in an interorganizational setting. In conjunction with the decision framework developed by Anderson and Gerbing (1988), the approach enables the researcher to assess rival hypotheses and relationships unspecified in the

theoretical model. This approach should be incorporated into future studies seeking to gain an understanding of the development of interorganizational relationships.

Managerial Implications

Although the context of our research limits the generalizability of the findings, our study underscores some practices that management should consider when assessing interfirm productivity. We identify two control factors that management can use to hold opportunism in check and lower transaction costs. First, management should assess the extent of interfirm cooperation. Franchise partners that work together to plan promotional campaigns and upgrade store facilities are likely to develop mutual goals (Anderson 1988). As a consequence of complementary goals, less effort is required to negotiate agreements. The second control factor that should be assessed is the level of formalization. As operating procedures become more precise in the designation of duties and responsibilities, channel partners become more aware of their obligations and those of their partners. Specification of expected behaviors fosters performance of prescribed activities and lowers opportunism. Thus, the management of franchised systems should continually audit the level of cooperation and formalization operating in the channel. As these factors increase, opportunistic inclinations and transaction costs are subdued.

Limitations and Future Research

Our use of multiple sample data collected over two periods offers advantages over monadic, static research. Other designs, however, could enhance our study. Tracking relationships between constructs over successive periods can augment the design. Assessment of relationships in successive periods enables the researcher to identify whether policies implemented in the recent past influence current productivity (Gundlach and Cadotte 1994).

Future research that treats the development of performance over successive periods should enable analysts to make policy recommendations with greater confidence.

The need for longitudinal research is particularly acute in relationships prone to opportunism. Most research focuses on the level of agent opportunism, but as the relationship evolves the franchisor has strong incentives to shirk obligations (cf. Lal 1990). As the level of opportunism rises, the returns from the relationship fall below acceptable levels (Anderson and Narus 1984). Consequently, one would anticipate high relationship mortality in such contexts. Time-series analyses should provide insight into the decline of channel relationships.

Our concentration on ex post transaction costs provides insight into factors that influence productivity. Nevertheless, ex ante transaction costs and other facets of ex post transaction costs should be analyzed. Williamson (1985, p. 21) maintains that ex ante efforts dedicated to the development of contracts should be considered in conjunction with efforts associated with ensuring the fulfillment of contracts. Anderson and Weitz (1992) maintain that commitment to a relationship involves a willingness to make short-term sacrifices to maintain a long-term relationship, and they outline a number of factors that influence interorganizational commitment. Future research could augment our research by incorporating ex ante factors and commitment costs. Analyses that use a broader set of transactional cost factors provide the opportunity for the researcher to gain a better understanding of limits to efficiency in interorganizational exchange.

Our analysis should be augmented with a broader set of control mechanisms and with treatment of incentive structures. Our study is tacit with respect to regulation of selection criteria and management training, yet these formal controls should also markedly influence channel outcomes (Jaworski 1988). Our analysis of cooperation addresses one aspect of informal control,

but relational norms also influence performance (Heide and John 1992). The influence of incentive structures on interfirm performance should also be evaluated (Milgrom and Roberts 1988). Although incentives tend to be rigid within a franchised system (Lafontaine and Kaufmann 1994), incentive structures are changed periodically in order to align agent and principal objectives. Research that simultaneously examines formal structures, informal controls, and incentives has potential to develop a more comprehensive theory of antecedents to transaction costs.

The franchising setting provides insight into organizational efforts to control transaction costs, but this context also limits the generalizability of our findings. Parallel wording of dyadic reports facilitated measure purification, but the empirical setting precluded data collection with multiple informants. Consequently, the results do not afford the opportunity to isolate trait characteristics from other sources of variance (Kumar *et al.* 1993). In addition, the form of control and the transaction costs are likely to vary between franchised systems and other networks. Clearly, our findings should be validated through future work that considers a broader set of contracts.

CONCLUSIONS

The purpose of our study has been to gain an understanding of antecedents to transaction costs. Using data collected in the Norwegian oil industry over a five-year period, we offered evidence that control mechanisms direct interorganizational behavior and transaction costs. We underscored the pivotal role played by opportunistic behavior in the production of transaction costs, and we presented interfirm cooperation and formalization as mechanisms that reduce opportunism. We hope that our study provides insight to managers of interorganizational networks and stimulates additional interfirm research.

MEASUREMENT APPENDIX

SCALE ITEMS	1990 Model ^a	1994 Model ^a	Invariance Tests	
			χ^2	P value
<u>Interfirm cooperation</u>				
We cooperate with the refiner to plan the future of the station.	.845	.774	--	-- ^b
We cooperate with the refiner in local sales campaigns.	.792	.886	0.483	.49
We cooperate with the refiner to design market plans.	.712	.921	1.132	.29
We cooperate with the refiner when we design advertisements.	.690	.750	0.008	.93
The refiner helps us to plan or modernize the store.	.384	.612	2.968	.09
<u>Formalization</u>				
There is no clear distribution of tasks between us and the refiner (R).	.558	.701	--	-- ^b
There are no clear routines for safety training for persons employed at our station (R).	.315	.654	3.395	.07
In general, the information routines from the refiner are very unclear (R).	.659	.712	1.283	.26
<u>Opportunism</u>				
We have reason to believe that the company hides important information regarding our station.	.731	.721	--	-- ^b
The company has not kept promises made when we entered the relationship.	.736	.742	0.302	.58
<u>Bargaining Costs</u>				
Our meetings with the refiner's representatives are very effective and systematic. (R)	.747	.802	--	-- ^b
Both parties are always well prepared in the meetings with the refiner so that decisions can be made. (R)	.746	.656	0.631	.43
<u>Monitoring costs</u>				
We use too much time to control quality and quantity of deliveries of gasoline. The time could be used to increase profitability of the station.	.603	.565	--	-- ^b
We spend too much time on accounting that could be used to increase the profitability of the station.	.684	.671	0.306	.58
We use too much time to control deliveries of mineral products from the company that instead could be used to improve profitability at the station.	.605	.826	1.729	.19
<u>Maladaption Costs</u>				
The information from the refiner is often poorly formulated and difficult to understand.	.780	.782	--	-- ^b
Important information from the company seldom comes at the right time.	.694	.781	1.567	.21
The information from the company is either incomplete or too voluminous to understand.	.906	.884	0.495	.48

Summary Statistics

	χ^2	141.838	142.005	771.914
	(d. f.)	120	120	571
a – All factor loadings have T-values that exceed 2.0.	p- value	.08	.08	.01
b – These items are fixed for the purpose of scaling.	RMSR	.05	.05	.10
R – These items were reverse scored.	CFI	.964	.974	.878

ENDNOTES

1. Interfirm cooperation is synonymous with the construct Reve (1980) refers to as vertical interaction. Both constructs address the level of coordination in the development of marketing plans.
2. A longer version of the manuscript can be obtained from the authors. The longer version provides macro-market and market share statistics for the 1990-1994 pentad.
3. Rejection of the null hypothesis indicates that the data sets are not equivalent and should not be pooled for further analyses. Consequently, composite analyses of the two data sets are not performed.
4. For the sake of parsimony, only the summary results from implementation of the Anderson and Gerbing (1988) decision framework are provided.
5. Analyses of the incremental fit for other direct paths between independent and dependent variables are not significant. In the initial model direct paths from cooperation to opportunism ($\chi^2=0.071$, $p < .79$), monitoring costs ($\chi^2=0.034$, $p < .85$), and maladaptation costs ($\chi^2=0.994$, $p < .32$) are non-significant; nor are the paths linking formalization to bargaining ($\chi^2=1.029$, $p < .31$), monitoring ($\chi^2=0.969$, $p < .32$), or maladaptation cost ($\chi^2=1.599$, $p < .21$). In the follow-up model direct paths from cooperation to monitoring costs ($\chi^2=0.538$, $p < .46$) and maladaptation costs ($\chi^2=0.626$, $p < .43$) are non-significant. Finally, the influences of formalization on bargaining ($\chi^2=0.104$, $p < .75$) and monitoring costs ($\chi^2=0.756$, $p < .39$) are non-significant.
6. Nested chi-square difference tests were performed to compare two models to the invariance model in Table 2. The first model assessed whether the factor residual variances and covariances were equivalent. The results ($\chi^2(10) = 7.023$, $p > .05$) indicate that none of the residual variances or covariances changed significantly. The second model examined whether the error variances and covariances were equivalent. The nested chi-square difference test ($\chi^2(18) = 58.727$, $p < .05$) identifies significant changes in the error variances for the three formalization measures and the second and third cooperation measures.

Table 1
Correlations Among Constructs

	Mean	Standard Deviation	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1. Cooperation	3.93	1.25	80											
2. Formalization	4.50	1.32	31	63										
3. Opportunism	3.06	1.48	-24	-45	70									
4. Bargaining Cost	3.95	1.34	-44	-27	46	72								
5. Monitoring Cost	3.31	1.42	-13	-28	36	25	70							
6. Maladaption Cost	3.72	1.32	-18	-26	36	26	24	83						
7. Cooperation	3.50	1.39	46	15	-13	-23	-04	-14	88					
8. Formalization	5.01	1.32	10	34	-30	-07	-16	-29	17	73				
9. Opportunism	3.79	1.75	-10	-32	44	32	33	20	-28	-29	78			
10. Bargaining Cost	3.91	1.30	-32	-22	25	44	05	19	-52	-23	37	65		
11. Monitoring Cost	3.32	1.48	-13	-23	30	22	36	19	-09	-16	32	14	72	
12. Maladaption Cost	3.47	1.33	-09	-26	34	19	15	46	-20	-36	25	36	23	85

Correlations are in hundredths with decimal places omitted.

Correlations greater than .18 have p values < .05.

Reliability estimates are provided on the diagonals.

a - Items 1-6 refer to the initial study, and items 7-12 refer to the follow-up study.

Table 2

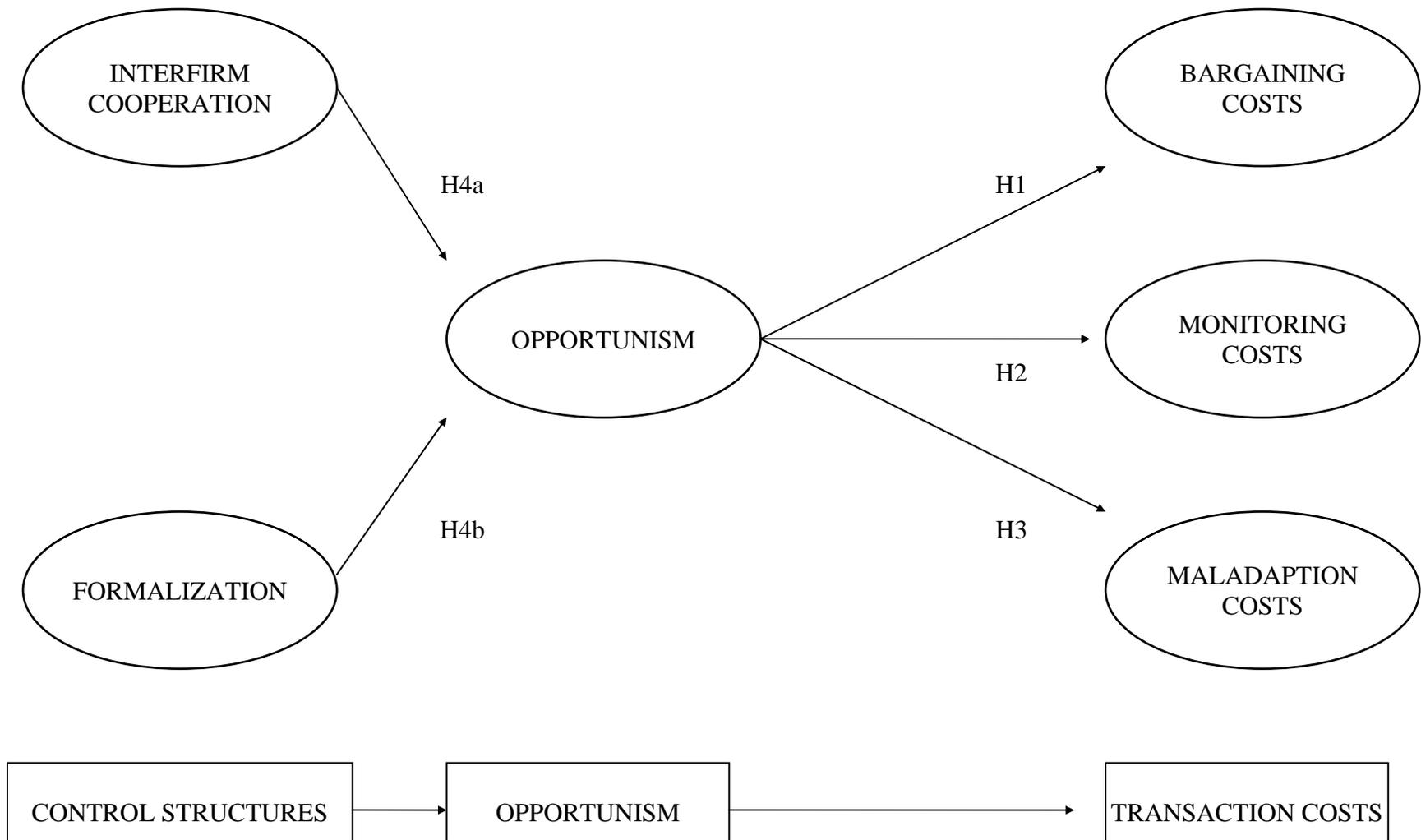
Parameter Values for the Structural Equation Model

Hypothesis	Proposed Path	Parameter Estimates				Invariance Tests	
		Initial Data		Follow-up Data		χ^2	p-values
		Parameter	T-values	Parameter	T-values		
H1	Opportunism to bargaining costs	.544	3.939	.503	3.672	0.377	.54
H2	Opportunism to monitoring costs	.449	2.993	.406	2.809	0.063	.80
H3	Opportunism to maladaptation costs	.491	3.825	.305	2.330	0.051	.82
H4a	Cooperation to opportunism	.042	0.278	-.339	-2.919	1.394	.24
H4b	Formalization to opportunism	-.722	-3.108	-.349	-2.663	1.138	.29
H1'	Cooperation to bargaining costs	-.363	-3.238	-.412	-3.695	0.111	.74
H3'	Formalization to maladaptation costs	--	--	-.344	-2.679	--	--

Summary Statistics

χ^2	146.069	143.987	735.582
d. f.	125	124	582
p value	.10	.11	.01
AGFI	.958	.971	.899
CFI	.965	.976	.907

Figure 1
A Model of Antecedents to Transaction Costs



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