ROBERT DAHLSTROM and ARNE NYGAARD*

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 provide the context for analysis. A test of the model using multivariate data across two time periods indicates that opportunistic behavior consistently increases transaction costs. Furthermore, cooperative interaction curbs bargaining costs, and formalization reduces opportunism. The authors discuss implications for interorganizational theory and franchising management.

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

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 rarely has 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 salary-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 therefore must 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 actions that management can take to raise productivity.

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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. In 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 enabling evaluation of changes in theoretical relationships (Menard 1991). Dynamic mapping of organizational properties provides an opportunity to make strategic interventions with confidence (Kimberly 1976). Nevertheless, longitudinal methods rarely have been incorporated into interfirm research (Anderson 1995).

The article proceeds as follows: We initially present a model of organizational antecedents to transaction costs. The method and data collection procedures then are 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. In 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 rarely has 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 result. Consider how franchisor opportunism influences ex post transaction costs.

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 as a result of these contracts. For example, parties to franchise agreements negotiate about order

Figure 1
A MODEL OF ANTECEDENTS TO TRANSACTION COSTS
quantities and delivery schedules. Franchisor opportunism should complicate bargaining over these issues substantially. 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 the following:

\[ H_1: \text{Franchisor opportunism is associated positively with franchisee bargaining costs.} \]

**Monitoring costs.** Monitoring 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:

\[ H_2: \text{Franchisor opportunism is associated positively with franchisee monitoring costs.} \]

**Maladaptation costs.** Maladaptation 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 suboptimal, trading partners incur these costs when they dedicate efforts to ensure that information is complete and accurate (Williamson 1985). For example, the franchisor might have an opportunity to make telephone calling cards available for sale at franchised outlets. The franchisor might 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 hypothesis is proposed:

\[ H_3: \text{Franchisor opportunism is associated positively with franchisee maladaptation costs.} \]

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 subunits (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 (Llewellyn 1930). 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 to the extent to which the principal and agent coordinate strategies for marketing the branded concept in the agent’s trade area (Reve 1980). 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. Bradach 1997; Ring and Van de Ven 1994), 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 through 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 (Dwyer and Oh 1987; John 1984).

Reve and Stern (1986) present alternative hypotheses regarding the role of these control mechanisms. Citing sociological theory of power and dependence (e.g., Cook 1977; Emerson 1962), they maintain that power wielding creates negative sentiments and fosters retaliatory behavior. In 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 that 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, as John (1984) and Dwyer and Oh (1987) indicate, participative decision making is associated negatively with opportunism.

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1Interfirm cooperation is synonymous with the construct that Reve (1980) refers to as "vertical interaction." Both constructs address the level of coordination in the development of marketing plans.
Operating policies are developed to ensure that the franchised system is implemented successfully, 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 is found to enhance opportunism. In 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, we 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). In 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 hypotheses are proposed:

\[ H_{4a}: \text{Interfirm cooperation is associated negatively with franchisor opportunism.} \]
\[ H_{4b}: \text{Formalized procedures and role responsibilities are associated negatively with franchisor opportunism.} \]

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 explained how specific theoretical relationships emerge over time. In this section, we offer preliminary hypotheses that examine whether the relationships outlined in \( H_7-H_4 \) 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 ongoing influence of franchisor opportunism on bargaining costs. Laboratory experiments involving repeated negotiation indicate that people who consistently bear the consequences of opportunism begin to recognize the direction the interaction is taking (Rubin and Brown 1975). These people 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 ongoing relationship between opportunism and bargaining costs. For example, in Wilemon \& Coughlan (1987), the franchisor acted with malfeasance when it refused to accept a qualified potential buyer of a service station. The franchisee consequently made 11 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 occur in franchise relationships that have not escalated to litigation. Franchisees that interact with miscreant franchisees yield less effective bargaining sessions and dedicate efforts to ensure that negotiation sessions are productive. In 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, ongoing bargaining costs also should be low (Pratt and Zeckhauser 1985). Therefore, the following hypothesis is proposed:

\[ H_5: \text{Franchisor opportunism has an enduring positive influence on franchisee bargaining costs.} \]

**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 C. N. Brown v. Gillen (1990), 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 ongoing efforts to monitor the exchange relationship. Therefore, the following hypothesis is proposed:

\[ H_6: \text{Franchisor opportunism has an enduring positive influence on franchisee monitoring costs.} \]

Maladaptation costs. People who 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 1984). For example, Jiffy-Lube established a program in which fleet customers paid the franchisor for services rendered at franchisee outlets (Jiffy-Lube v. Weiss Brothers 1993). The franchisor compensated the franchisee in the form of credits after deducting for royalties and processing costs. Franchisees perceived the franchisor’s mechanisms for determining credits as opportunistic. Moreover, the franchisees incurred ongoing 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 hypothesis is proposed:
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. Ongoing cooperation coalesces the objectives of buyer and seller and establishes an environment in which neither party benefits from opportunism (cf. Commons 1990). For example, for several decades, A.O. Smith and General Motors have worked together to design and test auto body frames, retool production facilities, and train employees (Coase 1988). Many facets of the relationship are not governed by formal agreements, yet the ongoing interaction enables the firms to constrain opportunism. Similarly, Bradach (1997) indicates that cooperative interaction enables the management of quick service restaurant systems to hold in check the number of violations to the interfirm agreement. Ongoing cooperation underscores the value of the relationship and thus makes opportunism less likely.

Consistent emphasis on rules and procedures also should have an enduring effect on opportunism. Formal procedures developed in previous 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 might receive quantity rebates from a vendor. The franchisor’s failure to pass these savings on to franchisees is regarded as an act of malfeasance. Franchisees initially will 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 franchise payments. Formal policies continually are implemented and refined to constrain opportunism. Therefore, the following hypotheses 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 with the assumption that the market is relatively stable during the 1990–1994 period. Industrial conditions and macromarket 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 during the period.2 The macromarket conditions also are suggestive of a slow growing economy. During the 1990–1994 period, the inflation and unemployment rates are relatively low and stable. The gross national product 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 23 area sales managers to monitor franchisee operations in Norway. Because each manager supervised the operations of 10 to 20 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 nonresponse 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 on the basis of four interviews with officials in the distribution network (two retail managers, an area sales manager, and the corporate distribution manager) and reviews of related distribution literature. A pretest of the survey instrument then was 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), they 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 that did not load properly in either factor analytic procedure were eliminated from both surveys. With the exception of the formalization scale (α = .63), the scales exceed the acceptance criterion for basic research (Nunnally 1978).

2A longer version of the article, which can be obtained from the authors, provides macromarket and market share statistics for the 1990–1994 period.
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.** The bargaining cost 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.** Monitoring 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 using 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 to the extent to which the 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 were 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 facilitates the assessment of commonalities in structural parameters for multiple samples (Anderson 1987). The items were subjected to confirmatory factor analysis using 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 ($\chi^2(1) = 5.156, p < .05$) 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 were equivalent. Results of this test indicate that the null hypothesis (i.e., that the data sets are equivalent) should be rejected ($\chi^2(171) = 224.046, p < .05$). 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 vary significantly 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, Anderson and Gerbing's (1988) decision framework was employed. This framework enables the

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3Rejection 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.

4For the sake of parsimony, only the summary results from implementation of Anderson and Gerbing's (1988) decision framework are provided.

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**Table 1**

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<th>Construct</th>
<th>Mean</th>
<th>Standard Deviation</th>
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</table>

Notes: Items 1–6 refer to the initial study, and items 7–12 refer to the follow-up study. Correlations are in hundredths with decimal places omitted. Correlations greater than .18 have $p$ values < .05. Reliability estimates are provided on the diagonals.
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 themitigating role of opportunism characterized in Williamson’s (1985) transaction cost framework. Thus, we treat opportunism as an antecedent to transaction costs and control structures as determinants of opportunism. In contrast, marketing control theory (Jaworski 1988; Ruekert, Walker, and Roering 1985) suggests that control structures can influence channel outcomes. We compared our theoretical model with models that introduce a direct association between control structures and outcomes directly. The theoretical model for the initial data set offers a relatively poor fit ($\chi^2(126) = 156.604$, $p < .05$, comparative fit index [CFI] = .950). Sequential chi-square difference tests were employed to compare the explanatory power of this model with rival models.5 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 ($\chi^2(1) = .119$, $p = n.s.$) 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 paths 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.

H1–H3 addressed the influence of opportunism on ex post transaction costs. Opportunism increases bargaining costs in

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 ($\chi^2 = .071$, $p < .79$), monitoring costs ($\chi^2 = .034$, $p < .85$), and maladaptation costs ($\chi^2 = .994$, $p < .32$) are nonsignificant, as are the paths linking formalization to bargaining ($\chi^2 = 1.029$, $p < .31$), monitoring ($\chi^2 = .969$, $p < .32$), and maladaptation cost ($\chi^2 = 1.599$, $p < .21$). In the follow-up model, direct paths from cooperation to monitoring costs ($\chi^2 = .338$, $p < .46$) and maladaptation costs ($\chi^2 = .626$, $p < .43$) are nonsignificant. Finally, the influences of formalization on bargaining ($\chi^2 = .104$, $p < .75$) and monitoring costs ($\chi^2 = .756$, $p < .39$) are nonsignificant.

The 1990 sample ($\beta_{14} = .544$, t-value = 3.939, $p < .05$), as well as in the 1994 sample ($\beta_{14} = .503$, t-value = 3.672, $p < .05$). Thus, H1 is supported. H2 also is supported because opportunism raises monitoring costs in the initial ($\beta_{24} = .449$, t-value = 2.993, $p < .05$) and the follow-up ($\beta_{24} = .406$, t-value = 2.809, $p < .05$) studies. Consistent with H3, opportunism influences maladaptation costs in the 1990 ($\beta_{34} = .491$, t-value = 3.825, $p < .05$) and 1994 ($\beta_{34} = .305$, t-value = 2.330, $p < .05$) samples.

The theoretical model was developed with the assumption that opportunism mediates the relationship between control structures and transaction costs. Nevertheless, interfirm cooperation lowers bargaining costs (H1) in the initial ($\beta = -.363$, t-value = -3.238, $p < .05$) and follow-up ($\beta = -.412$, t-value = -3.695, $p < .05$) studies. 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-value = -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 suggests that control structures reduce opportunism. Cooperation lowers opportunism in the follow-up sample ($\gamma_{41} = -.399$, t-value = -2.919, $p < .05$), but it does not influence opportunism in the initial study ($\gamma_{41} = .402$, t-value = .278, $p < .05$). In contrast, formalization constrains opportunism for the initial ($\gamma_{42} = -.722$, t-value = -3.108, $p < .05$) and follow-up ($\gamma_{42} = -.349$, t-value = -2.663, $p < .05$) studies.

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 ($\chi^2 = .377$, degrees of freedom [d.f.] = 1, $p > .05$), monitoring ($\chi^2 = .063$, d.f. = 1, $p > .05$), and maladaptation ($\chi^2 = .051$, d.f. = 1, $p > .05$) costs. 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 analy-

### Table 2

**Parameter Values for the Structural Equation Model**

<table>
<thead>
<tr>
<th>Proposed Path</th>
<th>Parameter</th>
<th>Initial Data</th>
<th>Follow-Up Data</th>
<th>Invariance Tests</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Parameter</td>
<td>t-values</td>
<td>Parameter</td>
<td>t-values</td>
</tr>
<tr>
<td>H1</td>
<td>Opportunism to bargaining costs</td>
<td>.544</td>
<td>3.939</td>
<td>.503</td>
</tr>
<tr>
<td>H2</td>
<td>Opportunism to monitoring costs</td>
<td>.449</td>
<td>2.993</td>
<td>.406</td>
</tr>
<tr>
<td>H3</td>
<td>Opportunism to maladaptation costs</td>
<td>.491</td>
<td>3.825</td>
<td>.305</td>
</tr>
<tr>
<td>H4</td>
<td>Cooperation to opportunism</td>
<td>.042</td>
<td>2.787</td>
<td>-.339</td>
</tr>
<tr>
<td>H5</td>
<td>Formalization to opportunism</td>
<td>-.722</td>
<td>-3.108</td>
<td>-.349</td>
</tr>
<tr>
<td>H6</td>
<td>Cooperation to bargaining costs</td>
<td>-.363</td>
<td>-3.238</td>
<td>-.412</td>
</tr>
<tr>
<td>H7</td>
<td>Formalization to maladaptation costs</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Degrees of freedom</th>
<th>$\chi^2$</th>
<th>$p$ value</th>
<th>Adjusted goodness-of-fit index</th>
<th>Comparative fit index</th>
</tr>
</thead>
<tbody>
<tr>
<td>125</td>
<td>146.069</td>
<td>.10</td>
<td>958</td>
<td>.965</td>
</tr>
<tr>
<td>124</td>
<td>143.987</td>
<td>.11</td>
<td>971</td>
<td>.976</td>
</tr>
<tr>
<td>582</td>
<td>735.582</td>
<td>.01</td>
<td>889</td>
<td>907</td>
</tr>
</tbody>
</table>
sis (χ² = 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 (χ² = .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 (Demsitz 1993). Although this relationship is a fundamental premise of transaction cost theory, transaction costs rarely have been the focus of research (Milgrom and Roberts 1991). Masten, Meehan, and Snyder (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. In contrast, we indicate that organizational structures can lower opportunism. 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 researchers 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. Second, the level of formalization should be assessed. 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 audit the level of cooperation and formalization operating in the channel continually. As these factors increase, opportunistic inclinations and transaction costs are subdued.

Limitations and Further 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). Additional 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 franchiseor 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, we 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 several factors that influence interorganizational commitment. Further research could augment our research by incorporat-
ing 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 treatment of incentive structures. Our study is tacit with respect to regulation of selection criteria and management training, yet these formal controls also influence channel outcomes markedly (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 also should 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 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, Stern, and Anderson 1993). In addition, the form of control and the transaction costs are likely to vary among franchised systems and other networks. 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 during 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

<table>
<thead>
<tr>
<th>Scale Items</th>
<th>1990 Modelb</th>
<th>1994 Modelb</th>
<th>Invariance Tests</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Interfirm Cooperation</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>We cooperate with the refiner to plan the future of the station.</td>
<td>.845</td>
<td>.774</td>
<td>—</td>
</tr>
<tr>
<td>We cooperate with the refiner in local sales campaigns.</td>
<td>.792</td>
<td>.886</td>
<td>.483</td>
</tr>
<tr>
<td>We cooperate with the refiner to design market plans.</td>
<td>.712</td>
<td>.921</td>
<td>1.132</td>
</tr>
<tr>
<td>We cooperate with the refiner when we design advertisements.</td>
<td>.690</td>
<td>.750</td>
<td>.008</td>
</tr>
<tr>
<td>The refiner helps us to plan or modernize the store.</td>
<td>.384</td>
<td>.612</td>
<td>2.968</td>
</tr>
<tr>
<td><em>Formalization</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>There is no clear distribution of tasks between us and the refiner (R).</td>
<td>.558</td>
<td>.701</td>
<td>—</td>
</tr>
<tr>
<td>There are no clear routines for safety training for persons employed at our station (R).</td>
<td>.315</td>
<td>.654</td>
<td>3.395</td>
</tr>
<tr>
<td>In general, the information routines from the refiner are very unclear (R).</td>
<td>.659</td>
<td>.712</td>
<td>1.283</td>
</tr>
<tr>
<td><em>Opportunism</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>We have reason to believe that the company hides important information regarding our station.</td>
<td>.731</td>
<td>.721</td>
<td>—</td>
</tr>
<tr>
<td>The company has not kept promises made when we entered the relationship.</td>
<td>.736</td>
<td>.742</td>
<td>.302</td>
</tr>
<tr>
<td><em>Bargaining Costs</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Our meetings with the refiner's representatives are very effective and systematic (R).</td>
<td>.747</td>
<td>.802</td>
<td>—</td>
</tr>
<tr>
<td>Both parties are always well prepared in the meetings with the refiner so that decisions can be made (R).</td>
<td>.746</td>
<td>.656</td>
<td>.631</td>
</tr>
<tr>
<td><em>Monitoring Costs</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>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.</td>
<td>.603</td>
<td>.565</td>
<td>—</td>
</tr>
<tr>
<td>We spend too much time on accounting that could be used to increase the profitability of the station.</td>
<td>.684</td>
<td>.671</td>
<td>.306</td>
</tr>
<tr>
<td>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.</td>
<td>.605</td>
<td>.826</td>
<td>1.729</td>
</tr>
<tr>
<td><em>Maladaptation Costs</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The information form the refiner is often poorly formulated and difficult to understand.</td>
<td>.780</td>
<td>.782</td>
<td>—</td>
</tr>
<tr>
<td>Important information from the company seldom comes at the right time.</td>
<td>.694</td>
<td>.781</td>
<td>1.567</td>
</tr>
<tr>
<td>The information form the company is either incomplete or too voluminous to understand.</td>
<td>.906</td>
<td>.884</td>
<td>.495</td>
</tr>
</tbody>
</table>

**Notes:**

- All factor loadings have t-values that exceed 2.0.
- These items are fixed for the purpose of scaling.
- Note: R items were reverse scored.
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—— and Barton Weitz (1992), "The Use of Pledges to Build and Sustain Commitment in Distribution Channels," Journal of Marketing Research, 29 (February), 18–34.


Lal, Rajiv (1990), "Improving Channel Coordination Through Franchising," Marketing Science, 9 (Fall), 299–318.


