A Transaction Cost Explanation of Vertical Control in International Markets

Saul Klein
Northeastern University

The author applies a model based on transaction cost analysis to explain the vertical control selections made by a sample of exporters. The model, which obtains significant support, suggests that an important contingency when deciding on the desired level of vertical control in a particular instance, is the ability of the market to limit the opportunistic tendencies of outside intermediaries. In effect, the market's ability to enforce contractual arrangements is often limited. When such enforcement cannot be relied upon, greater control represents a necessary alternative.

INTRODUCTION

How much control should a firm exert over its partners in an international channel of distribution? Issues of control and coordination have long been central to channel discussions (for example, Little 1970, Stern and El-Ansary 1982). Traditional explanations assume that all firms desire more control, but that such control is costly to achieve since it requires a greater commitment of resources. High control arrangements will then not be efficient unless the resulting fixed costs may be spread over a large volume of business. Consequently, it is expected that as the volume of business increases, firms desire a greater degree of control, specialize in the performance of distribution functions and reap the benefits of economies of scale. In the international business literature, firms have been posited to take an incremental approach with gradually increasing commitment and, hence, control, over time (Cavusgil 1980, Johansen and Vahlne 1977).

Journal of the Academy of Marketing Science
Volume 17, Number 3, pages 253-260.
Copyright © 1989 by Academy of Marketing Science.
All rights of reproduction in any form reserved.
ISSN 0092-0703.

Firms have a range of options as to the degree of vertical control that is most suitable for their inter-organizational relations. These options entail different structures and the use of different intermediaries. Maximum control does not always represent the most efficient option, since control is achieved at a cost to the firm; low levels of control may often be more efficient. The question that must be answered is how much control is desirable. This choice is conceptually equivalent to the notion of varying degrees of vertical integration or internalization of functions. Dwyer and Oh (1988) provide some empirical support for this equivalence. To better understand the control choice, the use of transaction cost analysis has been advocated.

Transaction cost analysis provides a superior theoretical foundation than that of previous work, in that it avoids mechanistic processes of increasing commitment, and relies on realistic behavioral assumptions and firm-specific factors. It is an approach with which many marketing theorists are becoming familiar. Transaction cost explanations are increasingly being cited in the marketing literature, dealing with structural as well as behavioral issues. Anderson and Weitz (1986) have discussed how transaction cost analysis may be applied to a range of marketing functions, and Anderson (1985) has tested a transaction cost explanation for integration of the salesforce function. Transaction cost analysis has also been applied to a wide range of backward integration issues. For example, Walker and Weber (1984) have examined component make-or-buy decisions in an automobile firm, while Armour and Teece (1980) have investigated vertical integration and technological innovation in the petroleum industry.

In the international context, Reid (1983) has pointed to the importance of transaction cost factors in the determination of export structures. Similarly, Anderson and Gatignon (1986) have developed a set of propositions based on transaction cost analysis to explain market entry mode decisions. Beamish and Banks (1987) have applied transaction cost analysis to explain why joint ventures may be preferred over wholly-

owned subsidiaries for multinational corporations, while the choice of independent versus integrated distributors in international markets has been investigated empirically by Anderson and Coughlan (1987).

Despite this increase in attention to transaction cost reasoning, relatively little empirical work has been done testing the appropriateness of the theory. In particular, the theory as conceptualized by Williamson (1975, 1985) explains the degree to which firms internalize necessary activities. Conceptually, as well as in reality, the choices which firms make may be arrayed along a continuum, with pure make or pure buy options as the endpoints of this continuum. In all empirical work to date, however, only discrete make or buy options have been investigated. The wide range of intermediary options has yet to be fully captured. This study attempts to provide such a test of transaction cost analysis in an inter-organizational context.

In the next section the foundations of the transaction cost framework are elaborated. This elaboration lays the ground for the specific hypotheses to be tested. Later sections describe the data collected, measures developed, and empirical tests conducted. Finally, conclusions and implications are presented.

THE TRANSACTION COST FRAMEWORK

The neoclassical economic paradigm views markets as efficient mechanisms for conducting exchange. Marketing theorists have tended to accept such a view which implicitly accepts the assumption of competitive markets. The validity of this assumption, however, is often questionable, for markets frequently fail to meet the structural conditions necessary for perfect competition: homogenous inputs and products; large numbers of buyers and sellers, each insignificant relative to the market; free entry into and exit from the market; and perfect information. When markets do not have these features market failure is said to occur, with the result that cost-free exchange disappears and efficient conditions for the organization of activities are no longer present. The costs that arise under conditions of market failure are referred to as transaction costs. Firms may gain a competitive advantage by recognizing a market failure situation before their competitors and adapting their inter-organizational relationships accordingly, and reducing their transaction costs.

Vertical control issues may be productively studied as cases of market failure. Where the costs of competitive markets are zero there is little or no incentive to substitute internal organization for market exchange (McManus 1975). That is to say, there is little or no incentive to bear the costs of increased vertical control, since relations with less control will be equally efficient. Costs exist in the operation of markets when there is a need for the monitoring and enforcement of the behavior of other parties. Such transaction costs are "typically decisive in determining which mode of exchange will obtain in what circumstances, and why" (Williamson 1975, p. 2).

The basic premise of transaction cost analysis is that the firm will internalize those activities which it is able to perform at lower cost, and will rely on the market for those activities where other providers have an advantage (Coase 1937). The degree to which activities are internalized, and control achieved, reflects the transaction costs incurred, which in turn depend on the extent of market failure.

As proposed by Williamson (1975), transaction cost analysis is built on a microanalytic framework with strong behavioral reality. Channel members are assumed to be subject to bounded rationality and to behave opportunistically. Imperfect, or asymmetric, information may provide such actors with an exploitable advantage in their dealings with other parties. The presence of uncertainty, the frequency with which transactions recur, and the degree to which assets are specific to a particular transaction represent contingent factors which determine the extent of transaction costs.

Competitive markets for intermediary services limit the abilities of one's partners in the channel to behave opportunistically since they are replaceable and their actions are easily discerned. If a distributor fails to provide satisfactory performance, for example, the relationship may be terminated easily. When markets fail, however, behavior may no longer be controlled at zero cost. Market failure occurs when an exchange requires one party to invest in assets, whether physical or intangible, that have no alternative usage outside that exchange. This investment has the effect of reducing a large-numbers bargaining situation to one of small-numbers exchange since the agent who invested in the specific assets has a first-mover advantage. The difficulties which this situation poses are reflected in the many cases of firms who entered foreign markets using outside distributors, but find that they cannot readily change these distributors, even when performance is unsatisfactory. Small-numbers bargaining may well be the normal situation in distribution channel decisions, particularly in an international context. Not only may initial large-numbers bargaining be fundamentally transformed, but the availability of alternative intermediaries who are able and willing to handle a manufacturer's goods, may be severely restricted at the outset. Environmental uncertainty exacerbates the problem by making it difficult to monitor the behavior of agents. Such uncertainty, given bounded rationality, thereby precludes the writing and enforcement of contingent claims contracts that specify every eventuality and consequent responses (Anderson and Weitz 1986).

When faced with an inability of markets to enforce behavior constraints and the limits on contractual prescience, firms will increase the degree of vertical control which they exert over the channel, so as to reduce costs of exchange. Failure to exercise such control is frequently heard in the complaints of exporters that their distributors are taking advantage of them. A limit on control is imposed by the fact that organizations are not perfect, and that transaction costs also exist within organizations. Labeled control losses, these internal transaction costs recognize that individuals within organizations also behave opportunistically, and costs must be incurred to monitor and enforce internal performance requirements. Control losses, hence, provide a disincentive to increase control, and are largely responsible for the assumed efficiency of markets over hierarchies under conditions of perfect competition.

The degree of vertical control that is desirable should reflect the magnitude of transaction costs encountered under different alternatives. The difficulty arises in quantifying these costs. Unlike costs of production, transaction costs are very difficult to measure since they represent the potential consequences of alternative decisions. Empirical research on transaction cost matters almost never attempts to measure such costs directly, but rather tests whether organizational relations line up with the attributes of transactions as predicted by transaction cost reasoning (Williamson 1985). Such an approach is followed below.

HYPOTHESES

Previous research attempting to explain firm choice with regard to a vertical control continuum has tended to concentrate on the costs of actually performing distribution functions, while transaction costs have only recently been recognized as having institutional significance. Since the theory suggests that firms act in such a way as to minimize the sum of transaction and performance costs, it is necessary to incorporate both types of costs in any conceptualization.

Performance costs reflect the firm's ability to perform necessary distribution functions at low cost. Based on such cost considerations, for example, a firm will exert less control, and contract with outside agents for the provision of selling services if the charge for those services is less than the costs involved in employing in-house sales personnel. Cost is determined mainly by the firm's ability to specialize and consequently reap the benefits arising from economies of scale. The more that a firm is able to achieve such economies, the greater will be the degree of vertical control. Transaction costs, which arise from external contracting, will also have a positive affect on the degree of vertical control. The higher the costs of contracting externally, the greater will be the incentive to internalize transactions and increase the degree of vertical control.

H1: The greater the volume of goods carried in a channel, the greater will be the degree of vertical control.

The structural incentive arising from the volume of goods carried in a channel is based on performance costs. The greater the volume, the greater will be the potential for internal specialization and division of labor, and thus the greater the potential for reaping the benefits of economies of scale. The effect of channel volume has been well-recognized in the literature, and often regarded as the single most important determinant of channel structure.

H2: The greater the frequency of transactions, the greater will be the degree of vertical control.

The more often that transactions are performed, the greater are the costs entailed in the administration and monitoring of those transactions. Since other channel members are assumed to behave opportunistically, the monitoring of their behavior is essential. Even if, through learning, the marginal cost of monitoring each transaction declines, the total costs continue to rise as transactions become more frequent. The effect of transaction frequency on channel structure has received little attention in the past.

H3: The greater the transaction specificity of assets, the greater will be the degree of vertical control.

Justification for the asset specificity dimension comes from the bargaining power that is the result of transaction-specific investments. These investments may take the form of specific sites or physical locations, specific physical assets, specific human assets, or dedicated assets. Specificity refers to the fact that these assets have no alternative use outside the particular transaction. Investment in such assets provides a degree of bargaining power that serves to limit competitive bidding. In addition, an intermediary acquires transaction-specific assets over time from learning-by-doing; these include specialized knowledge of market conditions and working relationships with the principal. When one party to a transaction possesses information that another does not, and cannot obtain without incurring a cost, information asymmetries arise. These information asymmetries provide the potential for opportunism. It is hypothesized that firms will attempt to internalize asset-specific transactions and increase the extent of vertical control which they exert in order to alleviate negative information asymmetries and the potential for opportunism on the part of outside intermediaries. The effect of asset specificity has already received some empirical support. Anderson (1985) and Anderson and Coughlan (1987) found asset specificity to be an important determinant of make-or-buy decisions in salesforce integration.

H4: The effect of uncertainty on vertical control varies with the particular type of uncertainty under consideration.

According to Williamson (1975) uncertainty increases transaction costs on account of bounded rationality. Internalization allows the absorption of uncertainty through specialization of decision-making and savings in communication expenses. Uncertainty in the foreign market provides the potential for outside intermediaries to behave opportunistically. Uncertainty makes it difficult to both write and enforce complex contingent claims contracts. Thus, higher transaction costs are encountered in uncertain environments, and a greater incentive to internalize transactions will exist.[1] Achrol, Reve and Stern (1983) similarly propose that the higher the uncertainty in the task environment of a marketing channel dyad, the greater will be the level of coordination within the dyad, and the closer will be the linkages between the dyad and other channel actors.

Examining the effects of uncertainty on buying group structure, Spekman and Stern (1979) found positive, albeit not significant, relationships between uncertainty and formalization and centralization. Applying a political economy model to marketing channels, Dwyer and Welsh (1985) found support for the proposition that perceived variability in the

output environment (that is, greater uncertainty) is associated with more integrated channel configurations.

On the other hand, the relationship between perceived environmental uncertainty and organization structure has been analyzed in terms of contingency theory. It has been argued that the more uncertainty that is perceived, the more flexible, or loose, will be the organization structure (Leifer and Huber 1977), so as to facilitate organizational adaptation. Hence, greater environmental uncertainty may lead to lesser control, in contrast to the transaction cost prediction. Following Burns and Stalker (1961), a large literature exists suggesting that looser structures, that is, less formalized and less centralized, are more effective under conditions of uncertainty.

High uncertainty, causing high transaction costs, encourages more control in order to reduce such costs. But, at the same time, high uncertainty encourages firms to maintain flexibility so as to adapt to that uncertainty, and consequently leads to less control. It appears that uncertainty is too broad a concept and that different facets of it lead to both a desire for flexibility and a motivation to reduce transaction costs. Support for such opposing uncertainty effects is provided by Balakrishnan and Wernerfelt (1986). They show that while uncertainty in general makes integration more effective, there is one particular uncertainty, the possibility of technological obsolescence, that works the other way. Similarly, Leblebici and Salancik (1981) posit that different dimensions of environmental uncertainty have opposing effects on routinization and formalization of decision-making. Splitting the uncertainty construct into its temporal and spatial components allows such opposing effects to be investigated. The former type of uncertainty, encompassing unpredictability, is embodied in a "dynamism" dimension, while the latter is captured by a "complexity" dimension (Duncan 1972). The existence of these two dimensions has also been demonstrated by Dess and Beard (1984).

METHODS

In this section, the empirical part of the study is reviewed. The data collection process is briefly described, and development of the various measures is discussed. The research involved a cross-sectional, field study where data were collected with a mail survey conducted in Summer 1985.

The unit of analysis for studying vertical control in this study refers to the exporting of a particular product to a particular foreign market by a particular firm. Characterization of the transaction and measurement of independent variables were all taken from the perspective of the exporter. Key informants who received the survey were identified from a directory of Canadian exporters. Each respondent was asked to provide some general background information on his/her company, and respond to the survey with respect to the firm's major export product in its major export market. Of firms in the research population 55 percent responded to the survey, representing 510 firms.[2] This high response rate may be attributed to the interest of the research population in the research question and their desire for information, as well as to the design of the survey instrument and the personal nature of the solicitation. Of these respondents, 477 provided usable surveys, although in many cases omitted data on one or more items. In only 338 cases were fully completed surveys obtained, and it is these that were used for estimation of the model.[3] All cases with data on necessary items, however, were used for construct assessment purposes.

To alleviate respondent burden, most questions used 7-point Likert agree-disagree scales. All constructs were operationalized using multiple items and previous operationalizations where available. Items tapping each construct were factor analyzed, and the factor scores were used as measures.

Dependent Measure: Vertical Control

The dependent variable in this study is continuous, capturing the degree of vertical control exerted by different firms in their export channels. The relevant dimensions of vertical control are centralization and formalization (Reve 1980). Together, these dimensions provide a measure of forward integration. Phillips (1982) has also used these dimensions as measures of control in sales branch operations. Centralization of decision-making, abstracting from Reve (1980), is defined as the extent to which power to make and implement channel decisions is under the control of the firm. The informants were asked to assess their influence relative to the influence of the next level in the channel. Formalization of channel transactions, again following Reve, is defined as the degree to which rules, fixed policies, and procedures govern the transaction. Operationally, formalization refers to the degree of programming and routinization of vertical flows. The three Likert scale items used to measure centralization, and the three formalization items are listed in the Appendix, together with the other construct operationalizations. These items were adapted from those used by Reve.

Centralization and formalization factor scores were added together to provide a single vertical control measure. A linear combination of the two is intuitively appealing since increases in both dimensions are associated with an increase in vertical control.[4] Combining the two factors recognizes that they are also compensatory in some cases, and that control may be effected by an increase in either one of the factors, within a limited range.

Independent Measures

The channel volume variable was derived from a combination of items which resulted in a dollar value for the firm's annual exports of the particular product to the particular market.

Transaction frequency refers to the number of individual elements that make up the transaction under consideration. Items used to operationalize this construct gauged the average number of shipments per month, number of orders received, and time spent by domestic personnel in the foreign market. (The latter item was used as a surrogate for the frequency of contacts between firm employees and foreign market agents.)

Asset specificity refers to the degree to which durable, transaction-specific assets were found in the export channel. The six Likert scale items used to measure this construct were adapted from those used by Anderson (1985).

Separate measures for the two types of uncertainty were developed. Uncertainty-complexity refers to the degree to which the respondent perceived the environment as simple or complex, that is, the number of possible sources of uncertainty. Uncertainty-dynamism refers to the rate at which changes in the environment occur. Items were selected to ensure coverage of customer, competitor, third-party, and technological factors. Three Likert scale items were used to measure complexity and four used to measure dynamism. Since no adequate existing measures of these dimensions were found, original measures were developed. Many of the items used, however, bear close similarity to those used by Spekman and Stern (1979) in their measure of perceived environmental uncertainty.

Two confounding factors were also included in the estimation model. The first is specific to the Canadian context, and represents whether the market in question was the United States or not. The great majority of Canadian exports go to the United States, and exploratory research indicated that Canadian firms have significantly different perceptions of the U.S. compared to other foreign markets. Many Canadian exporters regard the U.S. as an extension of the domestic market. As such, it was felt likely that, *ceteris paribus*, the degree of control exerted in the U.S. market would be greater than elsewhere. A dummy variable was created equal to one where the U.S. market was involved (in 65 percent of cases), and zero otherwise.

The second confounding factor is an artifact of the way in which performance costs were included in the conceptual model. The channel volume variable reflects the volume of only the particular product passing through the channel. If other products used the same channel, the ability of the firm to reap economies of scale would differ. A dummy variable was created, equal to one if the channel was shared and zero otherwise. (50 percent of cases indicated that the channel was in fact shared.) Again, it was expected that the effect of shared channels would be to increase the degree of vertical control. Similarly, Anderson and Coughlan (1987) found that manufacturers tend to add their new products to established channels.

TABLE 1
Correlation Matrix of Independent Variables[a]

		Variables						
		1	*2*	*3*	*4*	*5*	*6*	*7*
Variables	1	1						
	2	.22	—					
	3	.07	.20	—				
	4	.15	.32	−.05	—			
	5	−.05	.00	.07	.07	—		
	6	.04	.46	−.03	.23	−.08	—	
	7	−.00	.02	.02	−.05	−.06	.00	—

Key
1 = Channel Volume.
2 = Transaction Frequency.
3 = Asset Specificity.
4 = Complexity.
5 = Dynamism.
6 = U.S. Market.
7 = Shared Channel.
[a]n = 338 transactions.

TABLE 2
Multiple Regression Estimation Results[a]

	Standardized Beta	*Z score*	*Significance (one-tail)*
Channel Volume	.123	2.4	$p < .01$
Frequency	.161	2.7	$p < .01$
Asset Specificity	.172	3.4	$p < .01$
Uncertainty:			
Complexity	.162	3.1	$p < .01$
Dynamism	−.072	−1.4	$p < .10$
Confounds:			
U.S. Market	.119	2.1	$p < .05$
Shared Channel	.098	2.0	$p < .05$

$R^2 = .20$.
$p < .01$.
[a]n = 338 transactions.

Assessment of Measures

All measures developed were assessed in terms of reliability and validity. In all cases, only a single significant factor emerged for each construct. Eigenvalues for these single factors used to operationalize the constructs indicated sufficient reliability; the proportion of variance explained by the single factors used as measures are provided in the Appendix.[5] Validity assessment involved a factor analysis of all independent variables simultaneously to gauge convergence and divergence. Again satisfactory results were obtained. Table 1 shows the correlation matrix for the independent variables, and reveals no major problems of multi-collinearity.

RESULTS

Hypotheses about the factors encouraging or discouraging vertical control were tested via multiple regression. The dependent variable is the vertical control continuum, composed of the centralization and formalization factors. Multiple regression results are shown in Table 2. As may be seen, the two confounds operate in the expected directions, and the conceptual model obtains strong support. The effects of channel volume (representing performance costs) is positive and significant as hypothesized. For the transaction cost dimensions, frequency and asset specificity have positive effects, as does the uncertainty complexity dimension, while the uncertainty dynamism dimension has a negative effect. All signs are as hypothesized and are highly significant. Overall, the regression model provides a great deal of support for the model.

The empirical results presented above are impressive in their support of the transaction cost hypotheses. While the effect of the dynamism dimension of uncertainty is not as strong as the other variables, it does support the existence of divergent uncertainty effects, and the necessity for breaking up the

uncertainty construct into its components. The magnitudes of the standardized beta weights in the regression model provide very crude indicators of the relative importance of the different variables. As would be expected from its centrality in transaction cost theory, the effect of asset specificity is the largest of all the variables. Perhaps somewhat surprising is the smaller weight attached to the channel volume variable than to that of transaction frequency. Assessing the relative impacts of the different factors with any accuracy, however, must await future research.

CONCLUSIONS

In general, there are two types of costs involved in determining the desired level of control in inter-organizational relations. The first are the costs of actually performing necessary functions. The argument is then simply one of choosing the least cost alternative. This overlooks a second type of cost, representing the costs involved in the organization of an activity or of contracting with other parties. These "transaction costs" are based on the notion that intermediaries cannot always be trusted to act in accordance with our wishes. The firm must consequently incur monitoring and enforcement costs to ensure that contractual provisions are followed. These transaction costs are especially high in complex environments. In these situations, firms may be better off centralizing and/or formalizing their decision-making. Transaction costs will be greatest where competitive markets cannot be relied upon to ensure contractual compliance. This situation is often found where specialized knowledge and working relationships are required to market a particular product in a particular market.

Combining the two types of costs, the optimal degree of vertical control should then reflect both the volume of goods involved, and the vulnerability of the firm to opportunistic behavior by outside intermediaries. The results of this study indicate the importance of both of these elements in the determination of channel structure. This means that firms should pay particular attention to the risks they expose themselves to in the form of reliance on other parties. To the extent that their products are specialized or require specialized services it may be worthwhile for firms to establish channel structures that require a greater commitment of resources. The viability of such arrangements is limited by the firm's ability to cover the larger fixed costs. Conversely, where the firm is selling its products in a relatively competitive market, with large numbers of buyers and sellers, it may be more worthwhile to contract in the marketplace for the provision of marketing functions and give up some control. In such cases the firm may relieve itself of the burden entailed by more integrated channel arrangements and rely on looser structures, since the market will efficiently enforce contractual compliance.

IMPLICATIONS

This research represents a step forward in the application of transaction cost analysis, and demonstrates its relevance to vertical control issues. It must be seen in the context of the paradigm shift away from neoclassical economics toward political economy. This shift is reflected in the merging of behavioral and economic approaches to the study of exchange, and the realization that the life of an exchange relationship must be examined, not just its beginning. Anderson and Weitz (1986) have referred to the wide variations in the degree of observed vertical integration in marketing channels as "variations without a theme." An understanding of the effects of transaction costs provides such a theme, and sheds light on the nature of the forces shaping channel structure. The results presented above provide strong support for transaction cost determinants of channel structure.

On a purely theoretical level, this study substantiates the transaction cost approach as outlined by Williamson (1975). Further, the dimensions of transactions identified by Williamson (1979) obtain strong empirical support. This study sheds light on the effect of environmental uncertainty on vertical control. An unbundling of the uncertainty construct is essential for an understanding of the often opposing desires for flexibility and efficiency. As was shown, the temporal and spatial components of uncertainty have conflicting implications for optimal structure, and thus must be distinguished.

The implications of this study for marketing theorists relate to vertical control questions in general and export channels and market entry decisions in particular. The ability of the market to enforce desired or contracted behavior should not be taken at face value. Rather, a critical contingency should be recognized when theorizing about desirable structures and the effects of other variables. That contingency is the degree of market failure present in the particular product-market. Unless the critical contingency of market failure is recognized, major insights may be missed and normative prescriptions flawed.

The fit of the transaction cost model, though good for basic research, leaves much of the variance in channel structure unexplained. As in all studies, imperfect measurement would account for a portion of this variance. However, there is another, more important factor at work here. The model was estimated based on the current practices of firms, while the theoretical foundation of the model is essentially normative. To the extent that there are differences between what firms desire in their channel arrangements and what they are able to achieve, the fit of the model would be lessened. Firms clearly are not always able to obtain their desired level of control. Foreign government restrictions, the dictates of corporate parents, resource scarcity, and contractual commitments all play a part in maintaining this positive-normative gap.

Future research into transaction cost applications is required to corroborate these exploratory research results. In so doing, care must be taken to develop better measures of the various theoretical constructs. Alternative conceptualizations of the vertical control continuum, applied in different settings, will serve to further enhance our understanding. One promising source for such a continuum is Macneil's (1978) relational contracting scheme. Finally, efforts should also be made to include the internal transaction costs, that is, control losses, in the model, and thereby provide more comprehensive tests.

APPENDIX
Measures
(7-point Likert Agree-Disagree Scales)

(1A) Centralization

1. We make all of the decisions relating to transportation and physical delivery. (.58)*
2. We have considerable influence on the development of advertising and trade promotion. (.75)
3. We require that the product carry a certain symbol or logo. (.75)

(Variance Explained by Single Factor = 48%)

(1B) Formalization

1. Relations between ourselves and outside parties are governed by written contracts, specifying all aspects of performance. (.48)
2. Complaints and returns to us are handled through standard procedures. (.74)
3. We receive regular and thorough feedback on customer relations. (.77)

(Variance Explained = 45%)

(2) Asset Specificity

1. It is difficult for an outsider to learn our ways of doing things. (.53)
2. To be effective, a salesperson has to take a lot of time to get to know the customers. (.58)
3. It takes a long time for a salesperson to learn about this product thoroughly. (.69)
4. A salesperson's inside information of our procedures would be very helpful to our competitors. (.59)
5. Specialized facilities are needed to market this product. (.69)
6. A large investment in equipment and facilities is needed to market this product. (.53)

(Variance Explained = 37%)

(3A) Uncertainty-Complexity

1. There are many final users of this product. (.82)
2. There are many competitors for this product in this market. (.66)
3. We have only a few immediate customers for this product in this market. (Reverse scaled) (.65)

(Variance Explained = 51%)

(3B) Uncertainty-Dynamism

1. Our immediate customers change suppliers very frequently. (.28)
2. We are often surprised by the actions of retailers and wholesalers. (.77)
3. We are often surprised by the actions of our competitors. (.79)
4. We are often surprised by customer reaction. (.79)

(Variance Explained = 48%)

*Numbers in parentheses indicate factor loadings of each item on the single significant factor.

NOTES

1. While the effect of uncertainty is not perfectly unidirectional in theory, it is regarded as such in the present context. Market contracting would be efficient for all transactions in uncertain environments if asset specificity were zero. Since international marketing channels are extremely unlikely to involve zero asset specificity, especially with regard to human assets, a unidirectional statement of the effect is appropriate. The notion of zero asset specificity may itself be a fiction in all but the most basic commodity markets.
2. Since the characteristics of the total sample were unknown, there was no possibility of determining nonresponse bias. In the case of responses collected over time it is possible to compare late respondents with early respondents and infer that the former are more similar to nonrespondents in their characteristics. Such an assessment was made and it was found that late respondents (one month was the cut-off point) tended to be smaller firms, but did not reveal any other significantly different features. In any event, it is unclear what type of nonresponse bias could occur that would distort the theoretical analysis, since all cases fit within the domain of the theory.
3. Many firms (approximately 15 percent) refused to divulge sales data, and thus did not allow measures of the channel volume variable to be calculated. Other missing responses appeared to be randomly distributed across survey items.
4. Canonical correlation analysis was applied to determine the weights used for adding the two factors. Using the full set of independent variables and both centralization and formalization factors as dependent, the first canonical variate (accounting for 92 percent of eigenvalues) provided approximately equal coefficients for the dependent factors. Consequently, equal weights were given to the two factors comprising the vertical control continuum.
5. When factor analyzing the items for each scale in all cases only one factor emerged with a significant eigenvalue (greater than one). It is these factor scores that were used as measures of the various constructs in the estimation model.

REFERENCES

Achrol, Ravi Singh, Torger Reve and Louis W. Stern. 1983. "The Environment of Marketing Channel Dyads: A Framework for Comparative Analysis." *Journal of Marketing* 47 (Fall): 55–67.

Anderson, Erin. 1985. "The Salesperson as Outside Agent or Employee: A Transaction Cost Analysis." *Marketing Science* 4 (Summer): 234–254.

——— and Anne Coughlan. 1987. "International Market Entry and Expansion via Independent or Integrated Channels of Distribution." *Journal of Marketing* 51 (January): 71–82.

——— and Hubert Gatignon. 1986. "Modes of Foreign Entry: A Transaction Cost Analysis and Propositions." *Journal of International Business Studies* 11 (Fall): 1–26.

——— and Barton A. Weitz. 1986. "Make or Buy Decisions: A Framework

for Analyzing Vertical Integration Issues in Marketing." *Sloan Management Review* 27 (Spring): 3–19.

Armour, Henry O. and David J. Teece. 1980. "Vertical Integration and Technological Innovation." *The Review of Economics and Statistics* 62 (August): 470–474.

Balakrishnan, Srinivasan and Birger Wernerfelt. 1986. "Technical Change, Competition and Vertical Integration." *Strategic Management Journal* 7: 347–359.

Beamish, Paul W, and John C. Banks. 1987. "Equity Joint Ventures and The Theory of The Multinational Enterprise." *Journal of International Business Studies* 18 (Summer): 1–16.

Burns, Tom and G.M. Stalker. 1961. *The Management of Innovation.* Tavistock Publications.

Cavusgil, S. Tamer. 1980. "On the Internationalization Process of Firms." *European Research* 8 (November): 273–281.

Coase, Ronald H. 1937. "The Nature of the Firm." *Economica, N.S.* 4: 386–405.

Dess, Gregory G. and Donald W. Beard. 1984. "Dimensions of Organizational Task Environments." *Administrative Science Quarterly* 29 (March): 52–73.

Duncan, Robert B. 1972. "Characteristics of Organizational Environments and Perceived Environmental Uncertainty." *Administrative Science Quarterly* 17 (September): 313–327.

Dwyer, F. Robert and M. Ann Welsh. 1985. "Environmental Relationships of the Internal Political Economy of Marketing Channels." *Journal of Marketing Research* 22 (November): 397–414.

——— and Sejo Oh. 1988. "A Transaction Cost Perspective on Vertical Contractual Structure and Interchannel Competitive Strategies." *Journal of Marketing* 52 (April): 21–34.

Johanson, Jan and Jan-Erik Vahlne. 1977. "The Internationalization Process of the Firm—A Model of Knowledge Development and Increasing Foreign Commitments." *Journal of International Business Studies* 10 (Spring): 23–32.

Leblibici, Huseyin and Gerald R. Salancik. 1981. "Effects of Environmental Uncertainty on Information and Decision Processes in Banks." *Administrative Science Quarterly* 26 (December): 578–596.

Leifer, Robert and George P. Huber. 1977. "Relations Among Perceived Environmental Uncertainty, Organization Structure, and Boundary-Spanning Behavior." *Administrative Science Quarterly* 22 (June): 235–247.

Little, Robert W. 1970. "The Marketing Channel: Who Should Lead This Extracorporate Organization?" *Journal of Marketing* 34 (January): 31–38.

Macneil, Ian R. 1978. "Contracts: Adjustment of Long Term Economic Relations under Classical, Neoclassical and Relational Contract Law." *Northwestern University Law Review* 72 (March): 854–906.

McManus, John. 1975. "The Cost of Alternative Economic Organizations." *Canadian Journal of Economics* (August): 334–350.

Phillips, Lynn W. 1982. "Explaining Control Losses in Corporate Marketing Channels: An Organizational Analysis." *Journal of Marketing Research* 22 (November): 525–549.

Reid, Stan. 1983. "Firm Internationalization, Transaction Costs and Strategic Choice." *International Marketing Review* 2 (Winter): 44–56.

Reve, Torger. 1980. "Interorganizational Relations in Distribution Channels An Empirical Study of Norwegian Distribution Channel Dyads." Ph.D. dissertation, Northwestern University.

Spekman, Robert E. and Louis W. Stern. 1979. "Environmental Uncertainty and Buying Group Structure: An Empirical Investigation." *Journal of Marketing* 43 (Spring): 54–64.

Stern, Louis W. and Adel I. El-Ansary. 1982. *Marketing Channels*, 2nd edition. Englewood Cliffs, NJ: Prentice-Hall, Inc.

——— and Torger Reve. 1980. "Distribution Channels as Political Economies: A Framework for Comparative Analysis." *Journal of Marketing* 44 (Summer): 52–64.

Walker, Gordon and David Weber. 1984. "A Transaction Cost Approach to Make-or-Buy Decisions." *Administrative Science Quarterly* 29 (September): 373–391.

Williamson, Oliver E. 1975. *Markets and Hierarchies: Analysis and Antitrust Implications.* New York: Free Press.

———. 1979. "Transaction-Cost Economics: The Governance of Contractual Relations." *The Journal of Law and Economics* 22: 233–261.

———. 1985. *The Economic Institutions of Capitalism.* New York: Free Press.

ABOUT THE AUTHOR

SAUL KLEIN is Assistant Professor of Marketing in the College of Business Administration at Northeastern University. He received his B.A. from the Hebrew University of Jerusalem, and M.B.A. and Ph.D. degrees from the University of Toronto. His research interests revolve around issues of cooperation and competition in international markets. His work has been published in the *1987 Review of Marketing, Journal of Macromarketing, Canadian Public Policy*, and *Quarterly Journal of Business and Economics.*