CREDIBLE ENTICEMENTS:
INDUSTRIAL POLICY, TRANSACTIONS COSTS, AND
MNCs' SUPPLIER RELATIONSHIPS IN HOST COUNTRIES

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Thomas P. Murtha*
University of Michigan

*School of Business Administration, University of Michigan, Ann Arbor, MI.
48109-1234, Office telephone:(313)764-6360, Home telephone:(313)761-6583, E-
Mail: USERGDRK@umichub.bitnet, Assistant Professor of International Business.

ABSTRACT: CREDIBLE ENTICEMENTS: INDUSTRIAL POLICY, TRANSACTIONS COSTS, AND MNCS' SUPPLIER RELATIONSHIPS IN HOST COUNTRIES

This paper discusses the impact of host government policy inconsistency on multinational corporations' relationships with local suppliers that benefit from public funding. Empirical findings suggest that such relationships suffer from transactions cost disadvantages, due to concerns that unexpected losses of funding may cause the suppliers to demand new contracts. The findings reflect statistical tests on a structural equation, latent variable model estimated with data from a survey of 111 affiliates of MNCs operating in 36 countries.

The literature on relations between multinational corporations (MNCs) and host states has generally concerned bilateral bargaining between governments and international firms [See Mikesell (1971), Vernon (1971), Fagre and Wells (1972), LeCraw (1984), Kobrin (1987), Gomes-Casseres (1989, 1990)].[1] This article proposes and empirically tests a structural equation, latent variable model of MNC/host state relations, that incorporates the impact of host governments' industrial policies on MNCs' relationships with third parties. The article argues that, while industrial policy often provides host country suppliers with production cost advantages over MNCs' alternative sources, it may also create transactions cost disadvantages to dealing with these firms. These disadvantages arise due to concerns that governments may unexpectedly change their policies, leading targeted suppliers to demand new contracts. Such a dynamic would resemble Vernon's (1971) obsolescing bargain, in which host governments demand renegotiations of MNCs' terms of entry, using their newly-established facilities as hostages.

Teece (1986) has suggested that transactions cost economics, as pioneered among contemporary analysts by Williamson (1975, 1985), can contribute much to our understanding of MNC/host state relations, by framing the obsolescing bargain as an example of opportunistic recontracting demands by host states. Transactions cost arguments have for years formed the basis of the dominant theory explaining why MNCs enter foreign markets through wholly-owned affiliates, instead of exporting or licensing [Buckley and Casson (1976), Rugman (1981), Hennart (1982) and Teece (1986)].[2] Gomes-Casseres (1989, 1990) incorporates transactions costs to explain MNC ownership preferences in bargaining with host states.

As Kobrin (1987: 622) points out, however, bargaining with host states impacts MNCs' operations across a wide range of issues in addition to ownership. These include "exports, value added locally, investment size, incentives, tax rates and exemptions, employment of local nationals, and location of research and development facilities." Furthermore, as countries develop, states may take increasingly indirect roles in running their economies, and relatively increase the roles of markets and the private sector [Gomes-Casseres (1988), Porter (1990)]. If so, MNC/host

state relations should increasingly reflect social interests' and the private sector's intermediation and concerns, and less often direct government/firm interaction.

This article empirically extends the transactions cost discussion of MNC/host state relations to incorporate additional issues and interests. In particular, it examines subcontracting (or outsourcing) relationships that manufacturing MNCs form with local companies that receive public funding as a consequence of certain state industrial policies. These include equity ownership, subsidized or guaranteed loans, subsidized inputs, or other general subsidies. The discussion, therefore, departs from considerations of bilateral MNC/host state relations, to examine third-party relationships in which public policies augment MNCs' incentives to transact with local firms.

The empirical analysis uses archival data from 36 countries, and mail questionnaire survey data from one respondent each in 111 local affiliates of U.S. MNCs. The researcher gathered these data to estimate the parameters of a latent variable, structural equation model, specified *a priori* to investigate the impact of host states' policies on MNCs' international external sourcing networks.

Findings indicate that MNCs that source from subsidized suppliers vary their assessments of whether contracts offer sufficient performance assurances, depending on managements' uncertainty regarding host government policy consistency over time. As uncertainty increases across countries, non-contractual forms of assurance play increasingly important roles in governing these supply relationships.

The article contains five parts. Part II details the argument. Part III specifies the structural equation model. Part IV specifies a measurement model for the variables, data, statistical estimation, tests, and results. Part V concludes the article.

II

Many states have implemented policies to own, subsidize, finance, guarantee financing, or provide preferences to domestic firms that supply intermediate or final goods to MNCs [See Evans (1979), Duvall and Freeman (1981)]. These policies may serve a general purpose of attracting

foreign direct investors, while at the same time tailoring MNCs' ongoing operations to a variety of particular country objectives. For example, they may aim to countervail international threats and create viable global competitors out of local firms by "leasing the services of (the MNC's) global network" [Kogut, (1983: 51)]. The policies may also seek to promote technology transfer while reserving learning and profit opportunities in countries' international economic sectors, for local interests.

This study will argue that while subsidized supply agreements may provide production cost savings to MNCs, state participation often increases managers' perceptions of uncertainty. No matter how generous or apparently free-of-strings, publicly-funded incentives create a Trojan horse of external dependence. As Boddewyn (1988: 343) put it, "What governments give, they can also take away, since they are sovereign . . .".

Supplier relationships that depend on governments' policies suffer from at least two sources of uncertainty, beside those common to all contractual relationships. First, politics may lead governments to unexpectedly alter policies. Phenomena such as legislative turnover, interest group rent-seeking, side effects, unadmitted intentions, and bungling may impose obsolescence not only on host state-MNC bargains, but on any economic relationships to which government policies pertain. Unforeseen international political events, particularly as they affect national security, may have the same effect [Lenway and Crawford (1986), Jacobsen, Lenway and Ring (forthcoming)].

Second, contracts with states or that depend on their policies may prove difficult or impossible to enforce, because states themselves embody the enforcement mechanisms [Yarbrough and Yarbrough (1987a, 1987b, 1990), Grandy (1989)]. If governments unexpectedly reduce or withdraw assistance, targeted suppliers may have little choice but to pressure MNCs for contractual renegotiation or release. Resulting production interruptions, price increases, or costs of replacing suppliers may ripple through MNCs' international systems, threatening their global competitive positions.

For this reason, contractual terms that rely on government assistance become viable planning assumptions only in light of managers' past experiences and future expectations of a state's policies' consistency. If unexpected public policy changes have often damaged an MNC's interests in the past, planners will but reluctantly encumber their firms with such contracts, absent some alternative form of guarantee.

Transactions cost economics suggests that when uncertainty precludes complete, enforceable contracts, parties to an exchange seek alternative means of governance. Teece pointed out (1986: 41), ". . . in many instances, the governance machinery of international investment must be carefully configured to reduce the likelihood that costly haggling will break out between the multinational enterprise and host country, and also to protect transactions and contracts between independent host-country firms and downstream buyers."[3]

As a diametric alternative to simple external contracting, firms may organize internal production [Coase (1937), Williamson (1975)]. Many governance alternatives exist between the polar extremes, including self-enforcing contracts with credible commitments[4] that balance asset exposures in various forms of collaboration and hostage exchange [Williamson (1983)]. Hirschman (1971), Moran (1974), and Bergsten, Horst and Moran (1978) have investigated bonding, insurance, and self-enforcement in relationships between developing host countries and multinational extractive firms. Alternative governance modes might also be expected to play a role in manufacturing firms' relationships with subsidized suppliers, especially in countries with short-lived or unstable economic policy regimes.

This study investigated circumstances where subsidized host country suppliers support their relationships with MNCs by offering hostages in the form of transaction-specific investments. Transaction-specific assets, by definition earn inferior returns if transferred from their intended uses to alternative applications or relationships.[5] Specific examples include facilities that exclusively serve a customer or machinery that lacks application in serving other customers, such as model-specific auto body metal stamping dies.

Teece implies that relationships between host country economic agents and MNCs should be structured to place burdens of reassurance on whichever parties suffer least from specific asset exposures (1986: 42-3). MNCs' foreign facilities, by definition, represent site-specific investments. MNCs' outsourcing arrangements may entail costly strategic adaptation, dedicated supplier linkages, and relationship-specific investments in personnel manning supplier interfaces.

Supplier candidates using government-financed incentives may find it easier to contract with MNCs if they can assert symmetry in transaction-specific investments. This may require suppliers to make strategic choices of specialized rather than general technology, or to negotiate with international customers for allocations of value chain activities that balance inflexible asset exposures across contractual interfaces. But the investments need not take place as a direct consequence of such choices, for my argument to apply. Transaction-specific investments may take place as a consequence of states' choices concerning sectors or technologies to support, or types of MNCs they wish to attract. Asset specificity may pervade exchange relationships associated with certain types of goods, as a normal, unavoidable characteristic of production technology and processes. Any such investments raise the suppliers' costs of breaking agreements, and thereby can serve as hostages to credibly entice MNCs into outsourcing. The enticements work by helping local suppliers to simultaneously undercut MNCs' production costs and offset any transactions cost disadvantages that accompany government intervention. But the fact of these investments is insufficient to show evidence of the effect. Evidence would rely on showing that such investments increase in perceived importance, in the presence of transactions costs. The next section presents a structural equation model designed to test for such evidence in manufacturing MNCs' external sourcing relationships in host countries.

III

In the empirical analysis that follows, I assume that the transactions costs of subcontracting with subsidized local suppliers increase with uncertainty accrued from MNCs' past experiences of host government policy inconsistency. As this measure of uncertainty increases across countries,

MNCs' managers should be expected to accord increasing importance to these suppliers' transaction-specific asset exposures.

The perceptual nature of the phenomena involved in this proposition require that model-building and statistical tests confront the difficulty of indirect measurement of unobservable variables. Kmenta (1986: 579) distinguishes between two approaches to indirect measurement: use of proxies, and latent variables. One frequently used proxy, for example, represents the unobservable variable, education, by years of schooling. The study reported here predominantly used latent variables. Latent variables differ from proxies in that they use data on multiple observable indicators that may be gathered using measurement instruments, such as questionnaires.

Generally, the researcher selects the multiple indicators for a latent variable according to criteria suggested by the theory under investigation. He or she then submits them to confirmatory factor analysis, which apportions their variation between a single common factor and measurement error.[6] The implicit hypothesis thereby tested suggests that the indicators' common variation results from mutual correlation with the underlying latent variable. Explicit estimation of measurement error represents the major advantage of the latent variable approach over the alternative proxy method, or in the case of questionnaire data, dummy variables.

Tests of the substantive hypotheses of this project required not only measurement of perceptual correlates of transactions costs, but also statistical tests of the relationships among these latent variables. Increasingly refined techniques have emerged in recent years for estimating the parameters of such relationships. The covariance structure model employed here can incorporate latent variables as either dependent or independent variables in systems of simultaneous, linear regression equations. Excellent discussions of econometric applications of such models appear in Kmenta (1986: 581-7), Deleeuw, Keller and Wansbeek (1983) and Aigner, et al. in Griliches and Intriligator (1984). Long (1983) provides a helpful guide to the models that also reconciles discrepancies between psychometric and econometric terminology. The models take the general form

$$\eta = \beta\eta + \Gamma\xi + \zeta, \tag{1}$$

where η and ξ represent vectors of dependent and independent random variables, β and Γ represent coefficient matrices, and ζ represents equation error. Since η and ξ cannot be observed, however, the investigator observes vectors of indicators y and x, such that

$$y = \Lambda_y \eta + \varepsilon, \tag{2}$$

and

$$x = \Lambda_x \xi + \delta \tag{3}$$

Here, Λ_y and Λ_x represent matrices of the regression coefficients of the x and y indicators on the latent variables and ε and δ are vectors of measurement error terms. In discussing the particulars of the present model, I will refer to the equations of the form (1) as the structural equation model, and of (2) and (3) as the measurement model.

The study reported here followed the following procedure. First, the researcher specified the structural equation model. Second, proposed indicators for the latent variables were incorporated into a questionnaire. Third, after questionnaire responses were returned from the field, the data were used to test the proposed sets of indicators for their reliability as measures of the latent variables.[7] Finally, the combined structural equation/measurement model parameters were simultaneously estimated and tested for significance, using the LISREL computer program [Joreskog and Sorbom (1988)]. Subsequent sections will report on each of these steps in greater detail. The next sub-section discusses steps one and two in integrated fashion.

The Structural Equation and Measurement Models

This subsection presents structural equation and measurement models of states' industrial policies' effects on MNCs' relationships with host country suppliers. The structural model consists in three simultaneous linear equations. The equations are specified envisioning a mixture of latent and directly-observable variables. The model construes external sourcing in host countries as a joint outcome of 1) MNCs' international strategies, which rely on their production

and transactions cost advantages over host country suppliers; 2) host states' industrial policies and 3) national strategy implementation capabilities which enable states to maintain policy consistency. In the model, states' policies to build internationally-competitive domestic suppliers interact with MNCs' international competitive strategies to jointly influence the percentage of external sourcing in MNCs' affiliates' costs.

The model assumes that MNCs' international strategies allocate their productive activities among countries, and between their affiliates' value-added chains and those of outside suppliers [Kogut (1985), Porter (1986)]. The resulting international goods and information exchange networks embody MNCs' firm-specific production and transaction cost advantages over host country firms and other MNCs. MNCs gain production cost advantages from proprietary rights in technology, managerial systems or raw materials sources, investments in optimal scale plants that can fill substantial proportions of demand in imperfect markets, and abilities to shift production among countries to reflect changing factor cost conditions [Kogut (1985)].[8] Transactions-cost advantages arise because MNCs' networks permit them to undercut the costs of market contracting, by coordinating economic activities within their organizations. The following proposition necessarily holds, for a measure to control for the production and transaction cost advantages conferred by MNCs' strategies.

H_1 (γ_1) As MNCs' production and transaction cost advantages over external contractors increase, affiliates' outsourcing decreases.

The γ_i and β_i in this and subsequent hypotheses correspond to the regression coefficients in the equation system to be introduced shortly.

State-funded local external sourcing incentives aim to alter MNCs' optimal levels of subcontracting, for given production and transactions cost criteria. Assuming subsidized suppliers can equal or beat MNCs' internal production costs, firm managers must also consider and offset transactions cost disadvantages attributable to the state's intervention.

The model assumes that managers take subjective account of these transactions cost disadvantages, through introspection of their uncertainty concerning government policy

consistency. The study hypothesized that government inconsistency diminishes or precludes sourcing from subsidized suppliers, unless the suppliers have transaction-specific investments in place that can credibly commit them to the relationships. Where perceived government policy consistency minimizes such concerns, simple contracts may provide sufficient guarantees, reducing the importance of transaction-specific investments. Other factors held constant, therefore, the following two hypotheses apply:

H_2 (β_2) Managers' perceptions of the importance of transaction-specific assets in relationships with subsidized suppliers associate negatively with perceived host government policy consistency.

H_3 (β_1) As managers' perceptions of the importance of transaction-specific investments in relationships with subsidized suppliers increases, affiliates' external sourcing increases.

The relationships predicted by hypotheses 1 through 3 pertain to perceptions, which though unobservable, hypothetically associate with managerial impressions that can be gathered by questionnaire and used to estimate latent variables. The study further hypothesized that perceptions of government policy consistency would associate with observable state behavior conditioned by organizational attributes of domestic politics.

Details of the political arguments appear elsewhere [Murtha (1989, 1991)]. In summary, they suggest that government policy consistency will associate with 1) single party dominance, or the tendency of the political party most frequently controlling the state executive branch to succeed itself in office; 2) electoral rules that encourage broad legislative coalitions rather than winner-take-all politics, and 3) the central government's financial resources, relative to other domestic governmental units and to the overall size of the economy. Political correlates 1 and 2 directly refer to the frequency of shifts in control over executive and legislative power that can lead to policy changes. Correlate 3 refers to governments' capabilities to maintain funding for programs in the face of competing domestic demands.

Hypotheses 1 through 3, and the set of political organizational propositions discussed above are reflected in the following structural equation system.[9] In particular, equation (4) reflects

H_3 and H_1; equation (5) reflects the core hypothesis H_2; and equation (6) reflects the political propositions.

$$\eta_1 = \beta_1 \eta_2 - \gamma_1 \xi_1 + \zeta_1 \tag{4}$$

$$\eta_2 = -\beta_2 \eta_3 + \zeta_2 \tag{5}$$

$$\eta_3 = \gamma_2 \xi_2 + \gamma_3 \xi_3 + \gamma_4 \xi_4 + \zeta_3 \tag{6}$$

where

η_1 is a managerial estimate of the percentage of local market external sourcing in an affiliate's total costs.

η_2 is a latent variable representing MNCs' managers' perceptions of the importance of transaction-specific investments in their relationships with state-subsidized suppliers.

η_3 is a latent variable representing MNCs' managers' perceptions of past government economic policy consistency.

ξ_1 is an exogenous latent variable representing MNCs' managers' perceptions of firm-specific transaction and production cost advantages over local suppliers.

ξ_2, ξ_3, ξ_4 are exogenous, directly observable attributes of host country political organization.

β_i represent estimates of regression coefficients on endogenous variables.

γ_i represent estimates of regression coefficients on exogenous variables.

ζ_i represents equation error.

In addition to the structural equations, measurement model equations of the form (2) and (3) needed to be specified for the endogenous and exogenous latent and observable variables. Latent variable measurement equations are specified to estimate the regression coefficients and measurement errors of an hypothesized set of observable indicators on an expected common factor. In this study, the indicators were chosen from responses to the questionnaire described above. Single indicator (i.e., non-latent) variables are presumed measurable without error, and function as

regular regression variables in the structural equations. In this study, single indicator variables were chosen from archival data, and from managerial estimates on the questionnaire survey.

The measurement model for the dependent variables external sourcing (η_1), suppliers' transaction specific investments (η_2), and government policy consistency (η_3) was specified as follows:

$$
\begin{bmatrix} y_1 \\ y_2 \\ y_3 \\ y_4 \\ y_5 \\ y_6 \\ y_7 \\ y_8 \end{bmatrix} = \begin{bmatrix} 1 & 0 & 0 \\ 0 & \lambda_{y2} & 0 \\ 0 & 1 & 0 \\ 0 & \lambda_{y4} & 0 \\ 0 & \lambda_{y5} & 0 \\ 0 & 0 & \lambda_{y6} \\ 0 & 0 & \lambda_{y7} \\ 0 & 0 & 1 \end{bmatrix} \begin{bmatrix} \eta_1 \\ \eta_2 \\ \eta_3 \end{bmatrix} + \begin{bmatrix} 0.0 \\ \varepsilon_2 \\ 0.0 \\ \varepsilon_4 \\ \varepsilon_5 \\ \varepsilon_6 \\ \varepsilon_7 \\ 0.0 \end{bmatrix} \tag{7}
$$

where the y_i are observable indicators of η_1, η_2, and η_3, the λ_{yi} represent the regression coefficients of the indicators to be estimated on the latent variables, and the ε_i represent measurement error terms. One element of the coefficient matrix Λ_y is constrained to 1 for each latent variable η_2, and η_3, in order to scale their measurement units. Corresponding error terms are constrained to zero.[10] The same holds true for Λ_y element (1,1), which corresponds to the coefficient on the variable η_1 for external sourcing. External sourcing thereby enters the structural equation (4) as a single indicator variable, assumed directly observable without error.

The y_i indicators pertain to questionnaire data gathered on the following items. Observations on external sourcing (η_1) were gathered from managerial estimates. The formula given managers to guide estimation was

$$Y_{1i} = DC_i / C_i,$$

where DC_i represents domestic non-wage costs for company i, and C_i represents affiliates' total costs, including their intrafirm components.

Items y_2 - y_5 refer to managers' perceptions of the importance of transaction-specific assets in relationships with state-funded suppliers (η_2). Respondents identified subcontractors with host government subsidies, loans, ownership or contracts with state-owned enterprises. Respondents then evaluated the importance in these relationships of three types of suppliers' transaction-specific investments, fitting Williamson's taxonomy (1985: 55)[11] If government funding or a type of asset specificity did not figure in the relationships, respondents scored items zero. If both figured, items were scored from 1 (not important) to 4 (often critical). Items were

y_2 adjacent facilities (site-related asset specificity).

y_3 orders comprising the entire annual output of certain facilities (dedicated asset specificity).

y_4 manufacturing personnel's experience using your products (human asset specificity).

y_5 government job-training programs or credits aimed at processes that make or use the goods traded (human asset specificity).[12]

Items y_6 - y_8 referred to managers' perceptions of government policy consistency (η_3). Respondents noted how often government policy problems had negatively affected their businesses over 5 years ending in 1986. The five-part scale ranged from "very frequently" to "never." Items were:

y_6 unexpected tariff, local content, export quota or other trade regulation changes.

y_7 loss of business advantage due to government approval delays.

y_8 supplier unreliability due to government contract problems.

The measurement model for the independent latent variable for firm specific cost advantage (ξ_1) and the independent observable variables ξ_2, ξ_3 and ξ_4 was specified as

$$
\begin{bmatrix} x_1 \\ x_2 \\ x_3 \\ x_4 \\ x_5 \\ x_6 \\ x_7 \end{bmatrix} = \begin{bmatrix} 1 & 0 & 0 & 0 \\ \lambda_{x2} & 0 & 0 & 0 \\ \lambda_{x3} & 0 & 0 & 0 \\ \lambda_{x4} & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix} \begin{bmatrix} \xi_1 \\ \xi_2 \\ \xi_3 \\ \xi_4 \end{bmatrix} + \begin{bmatrix} 0.0 \\ \delta_2 \\ \delta_3 \\ \delta_4 \\ 0.0 \\ 0.0 \\ 0.0 \end{bmatrix}
\tag{8}
$$

where the x_i are observable indicators of the latent and non-latent ξ_i, and the λ_{xi} are regression coefficients of the x_i on the ξ_i and the δ_i are measurement error terms. The same explanations apply as above for the unit value and zero restrictions on the coefficient matrix Λ_x and error vector.

The indicators $x_1 - x_4$ pertain to questionnaire data gathered to measure the latent variable, managers' perceptions of firm-specific production and transactions cost advantages (ξ_1).

Respondents cost-ranked the value-chain activities (Porter, 1986) performed by their affiliates, then scored the top-ranked activity on factors relevant to subcontracting it to a competent local supplier or market entrant. Scoring used six steps, from strongly favoring to precluding outside supply. Items were scale economies (x_1), labor costs (x_2) inventory costs (x_3) and risk that potential suppliers would become market competitors (x_4).

The indicators x_5, x_6 and x_7 pertain to measures of the directly-observable country political organization variables ξ_2, ξ_3 and ξ_4. Murtha (1991) reports these data, relevant calculations, and their underlying archival raw data sources.

The measure x_5 refers to the degree of executive branch single party dominance calculated as

$$
x_5 = \frac{1}{492} \left(\sum_{i=1}^{492} m_i \right)
$$

where m_i represents 1 for every month in which the dominant party held executive office from January, 1946 through December 1986, and 0 for every month when it did not. "Dominant party" is defined for countries as the party that has held office for more months than any other since World War II.

The measure x_6 refers to government financial strength, which may be evaluated either relative to other countries, or relative to the domestic private sector. The model was alternately estimated using data consistent with both types of evaluation. Per capita gross domestic product was used to represent the former, and central government revenue as a percentage of GDP the latter.[13]

The measure x_7 refers to legislative party fractionalization as of 1986 [Rae and Taylor (1970)], defined as the probability that two random draws from a national legislature will yield members of different political parties. High values on this statistic associate with proportional representation electoral rules.[14] Proportional representation institutionalizes multiple legislative parties, so that the viability of any one as a current or prospective governing party depends on its participation in coalitions. This condition places a premium on consensus, and on long term working relationships that cut across party lines [See Lijphart (1984), Katzenstein, (1984)].

This concludes the presentation of the combined structural equation and measurement models to test the study's hypotheses. Figure 1 presents the combined models in conventional

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Insert Figure 1 about here.

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schematic form, as set up for estimation using the LISREL computer program. In the diagram, circles represent latent and non-latent variables in the structural equations; squares represent observable indicators of the variables. Greek notation matches that of the equations specified above.

IV

The structural equation system proposed above shares many characteristics with small econometric models. Many of its variables, however, refer to managerial perceptions, which unlike variables such as prices, can not be observed. These have been hypothesized as common factors or latent variables underlying indicators observed through the subjective technique of a mail questionnaire survey. This section will discuss the survey, respondent group and reliability testing for the latent variables. Then it will discuss the estimation procedure and results for the combined models.

Field Work

Field work for the project consisted of a mail questionnaire survey conducted in some U.S. non-defense manufacturing MNCs' foreign affiliates between November, 1986 and June, 1987. The respondent group was assembled on the basis of 146 cold calls to head offices of MNCs listed in the Conference Board's *Key Companies Directory* (1986). Twenty-three gave permission for 203 of their foreign affiliates to receive the survey. One-hundred-twenty-nine of these responded, of which 111, representing 15 industries in 36 countries, proved usable for the analysis presented here. The industries were adhesives, auto parts, automation, automobiles, computers, electric devices, electric motors, fasteners, filtration, heavy transport, pharmaceuticals, security devices, specialty materials, tires and rubber, and toiletries. Respondents held job titles of purchasing manager, manufacturing materials manager, supply manager, works manager, manufacturing director, business planning, development or strategy staff, and managing director. Table 1 presents the country list.

Insert Table 1 about here.

Latent Variable Reliability

Upon completion of the field work and after inspection of the response data, the researcher selected indicators of the latent variables from among the questionnaire items designed to measure them. Separate confirmatory factor analyses were run for the independent and dependent latent

15

variables, in order to establish the composite reliability of each set of proposed indicators. Reliability, in this context, refers to a ratio of common to overall variance explained by any underlying common factor. Levels of .6 or above meet conventional standards for accepting a set of indicators as a unidimensional representation of an underlying variable [Bagozzi and Yi (1988)]. Bagozzi (1980: 176-83) provides technical details. Reliabilities for the latent variables, importance of transaction-specific assets (η_2), government policy consistency (η_3) and firm specific cost advantage (ξ_1) were .827, .927, and .732.

Parameter Estimation

The combined structural equation and measurement model parameters were estimated as a simultaneous equation system using a full information maximum likelihood (FIML) computational procedure. Tables 2 and 3 present the results.

The tables present the results of the last of two rounds of estimation on each model. In the first round, no zero restrictions were imposed on the exogenous variables' coefficient matrices. Regression parameters were, therefore, estimated for all possible relationships of the independent to the dependent variables. This procedure opened the possibility of uncovering unpredicted relationships not specified in the original structural equation system. In the second round of estimation, zero restrictions were imposed on the γ_i in accordance with the theory presented in Section III, except for coefficients unexpectedly uncovered as significant at the .10 probability level in the first round.[15] Although the model reported here used the indicator GDP per capita to proxy for government financial strength, rather than the alternative central government revenue as a percentage of GDP, the latter was also tried. The results section will comment on the minor differences in key parameter estimates and test statistics between these specifications.

Readers should not consider familiarity with the LISREL computer program a prerequisite to informed evaluation of the results that follow. Table 3 presents estimates of regression coefficients, t-statistics to test their significances, and chi-square to test overall model goodness-of-fit. These may be interpreted using the same criteria as apply to any multiple-equation econometric

system. Table 2 presents coefficients and t-statistics for the regression of the indicators on the latent variables. These may be considered equivalent to loadings in a factor analysis, except that in the confirmatory mode applied here, the indicators for particular factors were chosen by the investigator, not a computer algorithm.

Insert Tables 2 and 3 about here.

Results

Estimation and statistical tests of model parameters generally supported the main hypotheses advanced above. All regression coefficients of the observable indicators on the latent variables were positive and significant, as expected. Among the key hypotheses advanced for the structural equation model, unambiguous support emerged for the expected negative relationship between government policy consistency and managers' perceptions of the importance of subsidized suppliers' transaction specific assets (H_2 on β_2 in equation (5); t = -4.124, p ≤ .01). Transaction specific assets also proved positive and significant at p ≤ .10 in the external sourcing equation (H_3 on β_1 in equation (4)). These two hypotheses, in combination, sketch the essentials of the argument that transaction-specific asset exposures can offset MNCs' reticence to enter public-policy-contingent supply relationships involving host states with inconsistent policies. The control variable, firm-specific cost advantage displayed the expected negative sign, and was significant at p ≤ .05.

The country political organizational variables, single party dominance and GDP per capita performed as expected in equation (6) for policy consistency, with significance at p ≤ .05 and .01. Legislative party fractionalization did not. In addition to the expected relationships of equation (6), party dominance proved positive and significant (p ≤ .01) in the transaction specificity equation (5), while GDP per capita was negative and significant (p ≤ .10) in equation (4) for external sourcing. The implications of these results will be addressed in the discussion section.

Earlier versions of the model used central government revenue as a percentage of GDP, rather than GDP per capita as the measure of state financial strength.[16] These versions differed from the present results, in that all hypothesized variables including legislative party fractionalization, plus the unanticipated relationships described above appeared equivalently signed and significant at p ≤ .05 or better. In addition, the revenue measure proved significant in the asset specificity equation (5). The models that employed GDP per capita, however, performed significantly better in statistical tests of overall model fit, and differed by 15 percentage points in total R^2 (.365 compared to .515).[17] Implications will receive further discussion in the next section.

Overall goodness-of-fit statistics, on balance, favor accepting the model as adequate. The chi-square statistic was 93.09, 86 degrees of freedom, suggesting that the data fail to reject the model at a probability level of .28. Root mean square residual was .058, and Joreskog and Sorbom's adjusted goodness-of-fit ratio was .664. Both of these results fall short of conservative ideals of .05 and "about .9," [Bagozzi and Yi (1988)]. Coefficient-of-determination (R^2) was .515.

Discussion

Support for the key transactions cost hypotheses rests on a few relationships embedded in a multiple equation system.[18] The relative complexity of the model represents a tradeoff between parsimony, and the ability to identify the relationships of interest while associating findings with institutional settings that comprise the domain of the obsolescing bargain argument. The unmodeled positive relationship of single party dominance to perceived importance of transaction-specific assets in government subsidized supply relationships, and the negative relationship of GDP per capita to external sourcing also suggest qualifications to the paper's main argument, as well as an elaboration.

Inspection of the data confirms that high values of party dominance typify newly-industrialized authoritarian and single- party states (as well as a few industrialized democracies,

most notably Japan, Italy and Sweden). Modal high GDP countries tend to be industrialized democracies. The positive relationship of party dominance to suppliers' asset specificity may suggest that public policy contingencies represent a greater threat to agreements in developing countries than in industrialized countries.

Yet paradoxically, party dominance associates positively with policy consistency. Such a pattern could arise from rapid industrialization, such that past institutional arrangements and perceptions co-exist with characteristics of an advanced economy. Time-series analysis might demonstrate a decreasing trend in the importance of asset specificity, and the policy inconsistency it offsets, as economies develop. Limited experience may also lead MNCs to weigh asset-specificity more heavily in developing countries. Authoritarian states may intervene in their economies relatively more often, so that asset specificity in subsidized supply relationships more often takes non-zero values. These relationships may also emerge as a consequence of the prevalence of local content regulations in industrializing countries.

On the other hand, these arguments suggest a relationship of GDP to external sourcing opposed to that exhibited in the data. Substituting GDP for revenues as a percentage of GDP substantially attenuated virtually all structural equation parameter estimates, increased R^2, and resulted in a relatively large γ and t-statistic on GDP ($\gamma = .392$; $t = 5.35$, $p \leq .01$). This suggests a substantial role for GDP or factors correlated with it, in determining MNCs' external sourcing.

One explanation may be that high labor costs in high GDP per capita countries create relative incentives to source in LDCs. Local content rules and/or managerial concerns regarding political stability in LDCs may cause MNCs to source externally rather than erect facilities to benefit from location factor cost advantages. This explanation complements findings that MNCs' managers accord greater importance to subsidized suppliers' transaction-specific assets as government policy consistency declines. In the absence of sufficient reassurances regarding contractual performance, MNCs can always externally source, elsewhere. External sourcing maintains MNCs' network flexibility, and minimizes the exposure of company-owned facilities to expropriation or other less-drastic coercive measures.

These findings also have implications in the more general context of governments' strategies to attract foreign direct investment and tailor MNC performance to national economic development priorities. Robinson's survey evidence (1983) implied that governments may often pay MNCs to take actions that they would have taken anyway. This occurs because managers apply their firms' strategic criteria to decisions before rather than after netting out government-funded incentives, on the rationale that the undertakings must meet company objectives even if governments change their policies. Consequently, up-front credible enticements such as site-specific infrastructural investments, funding dedicated suppliers' facilities, and paying for highly-specific types of worker training may have a greater incremental impact on MNCs' location decisions than cash subsidies paid out over time. They also may meet a higher standard of domestic political acceptability.

V

This article provides empirical support for a research concept of host state/MNC relations incorporating relationships with third parties. The field's dominant paradigm envisions bilateral bargaining relationships between governments and MNCs. Empirical work has most often used share breakdowns of MNCs' affiliates' ownerships as their dependent variables [See Kobrin (1987), Gomes-Casseres (1989, 1990)].

The framework presented here, by applying transactions cost economics, provides tools to analyze the effects of governments' policies on MNCs' organization structures, as distinct from their ownership structures. Organization structure, in this context, refers to the consequences of managers' decisions about whether to locate production activities within MNCs' affiliates' organizations, or to purchase these as inputs from independent host country subcontractors.

Bargaining theory and this article's augmented framework, nevertheless, share a common concern with the apportionment of property rights. Yet bargaining frameworks examine the interaction between MNCs and host countries over property rights in affiliates' income streams, without distinguishing the interests of public and private host country actors. These interests

include taxes and royalties accruing to government, and legal stipulations of local equity ownership rights in MNCs' affiliates that may accrue to either the government or private individuals. The framework presented here differs, in that it separates public and private host country interests, and models interactions with foreigners over rights to perform production activities. This approach permits third parties in host countries -- MNCs' suppliers -- to be explicitly included in the models.

The capability to bring third parties more explicitly into models can play a useful role in broadening the applicability of firm/host state relations frameworks to apply in discussions of industrial policy. Host country industrial policies can make MNCs dependent on government plans and agreements that they did not negotiate, and which neither they nor their suppliers and customers have means to enforce. In these circumstances, exchange may fail unless host country elements can assure MNCs that they will fulfill their contractual commitments, even if their governments change policies. Similar considerations surely apply in planned economies and the transitional economies of Eastern Europe, where states must live down past behavior, commercial organizations have murky, black-market pasts, and markets have short histories.

FOOTNOTES

1. Kobrin (1987: 610) has argued that the bargaining model, in its general terms, represents "*the* currently-accepted paradigm of MNC-host country relations in international political economy."

2. Buckley and Casson's early work on the internalization theory of FDI (1976) proceeded largely along parallel lines with Williamson's more general theory (1975), but independently. See Teece (1986).

3. This will hold true not only for independent host country firms, but for state-owned enterprises (SOEs) as well. SOEs might be more reliable contractors than subsidized private enterprises, if states favored them over non-public sector entities. These enterprises, however, must often blend their profit-seeking goals with social welfare objectives, such as employment. The need to serve political agendas may reduce the transparency and predictability of their operations, from MNCs' perspectives. I have argued elsewhere that state enterprises may equivocate *more* than subsidized private enterprises in executing contracts, if their use as policy instruments associates with poor governmental access to alternative instruments, or if states use these enterprises' cash flows as a substitute for taxation. Murtha (1989) discusses this at some length, along with some other considerations that suggest a similar conclusion.

4. Parties to strategic exchanges involving credible commitments willingly adopt self-limiting postures, to stabilize their relationships. Credible commitments work by making strategic units' reactions to others' actions predictable, and usually unavoidable. The concept is due to Schelling (1960).

5. Williamson (1985: 55) defines four types of transaction specific assets in exchange relationships, discussed here from a seller's perspective. **Site** specificity arises when economic benefits accrue to locating sellers' facilities in proximity to customers' facilities, as might an oil refinery, chemical feedstock supplier or chemical processor. Site specificity represents a special case of **dedicated** asset specificity, that arises when a customer takes all or most of an asset's output. **Physical** asset specificity exists when equipment has design characteristics specific to an output that serves only a particular customer's needs. Dies to stamp model-specific auto body sheet metal, exemplify this category. **Human** asset specificity capitalizes persons' knowledge concerning unique characteristics of customer needs or supplier capabilities in ongoing exchange relationships.

6. Confirmatory factor analysis differs from exploratory methods, in that the indicators representing a factor are specified by the investigator on theoretical grounds rather than extracted inductively by statistical analysis. The resulting latent variables are reliability-tested in advance of overall system estimation. See Bagozzi (1980).

7. Reliability in this context refers to a measure of unidimensionality of the constituent items of the latent variable. Bagozzi (1980) provides an excellent discussion. See section headed "Latent Variable Reliability," below.

8. Optimal network configurations take advantage of local factor cost conditions around the world to source activities at least-cost sites. But in theory, MNCs' affiliates and local firms face the same factor cost conditions in a given host country. As a practical matter, however, institutional details, such as patterns of unionization, can create differences.

9. The system as originally specified also contained an equation for value-added. This equation added little to the explained variance of the overall model, and only one of its coefficients was

significant at the .10 probability level. Consequently, it was dropped to simplify this article's exposition. Removal of this equation did not alter the outcomes of statistical significance or goodness-of-fit tests on the model.

10. As latent variables are unobservable, measurement units must be arbitrarily scaled.

11. See footnote 5.

12. One proposed item for the asset specificity latent variable needed to be removed, in order to meet the reliability criterion. This item represented the physical category in Williamson's taxonomy. See section headed "Latent Variable Reliability," below.

13. GDP per capita was taken as reported by the International Monetary Fund (1986) for 1984. Central government revenue as a percentage of GDP was calculated for 1984 or most recent year available. These ratios and their underlying data sources are reported in Murtha (1991).

14. Proportional representation awards legislative seats to all parties participating in an election based on the percentages of the overall vote (above some minimum) that they win. By contrast, majoritarian, geographical representation systems award seats to the top vote getters in each district. See Liphjart (1984).

15. In all cases, the equation systems were specified as recursive (β triangular) with the equation error covariance matrix restricted to diagonal. This specification excludes simultaneous causation, and imposes an assumption of uncorrelated structural equation errors. Such systems, by definition, meet criteria for exact identification of their parameters (See Long, 1983: 34-6).

16. Revenue measure represents state financial strength as a domestic political organizational phenomenon and GDP per capita measures the concept as a relative international

phenomenon. The two measures are not correlated. Inspection of the data suggests that high revenue countries, while often industrialized democracies, also often have relatively large public sectors. Large public sectors may correspond to a higher incidence of state owned enterprises, and higher incidence of the types of state intervention captured in the transaction-specificity equation. This may explain the positive relationship of central government revenue to asset specificity in the estimation of the alternative specification of the model.

17. The results for the alternative model specification may be obtained from the author.

18. The multiple equation context complicates the test and presentation, but plays a necessary role by controlling for interdependent phenomena that include the main relationships of interest here. Full information maximum likelihood (FIML) estimation of multiple equation systems uses information on all relationships in a model, to estimate each parameter. Consequently, structural equation model estimation using this procedure represents a conservative investigative posture toward statistical bias, which can result from omitted relationships and variables.

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TABLE 1:

Countries included in the respondent group, categorized by per capita income levels according to World Bank criteria (See 1988 World Development Report, New York, Oxford University Press) Parentheses contain numbers of observations.

A. **Industrial Market Economies:** Australia (5) Belgium (4) Canada (3) Denmark (1) France (3) Germany (8) Ireland (1) Italy (4) Japan (5) Luxembourg (1) Netherlands (3) New Zealand (4) Spain (6) Sweden (3) Switzerland (2) United Kingdom (10) USA (6)

B. **Upper Middle Income Economies:** Argentina (3) Brazil (7) Chile (1) Hong Kong (2) Korea (2) Mexico (3) Portugal (2) Singapore (3) South Africa (3) Taiwan (4) Venezuela (3) Yugoslavia (1)

C. **Lower Middle Income Economies:** Colombia (1) Indonesia (1) Thailand (1) Zimbabwe (1)

4. **Low-income Economies:** India (1) Kenya (2) Pakistan (1)

Table 2

MEASUREMENT MODEL ESTIMATION

Latent Variables and Indicators (y, x)

MNCs' managers' perception of the importance of government-subsidized suppliers' transaction-specific investments (η_2)

y_2	adjacent facilities (site-related)	0.704 4.351***
y_3	orders comprising the entire annual output of certain facilities (dedicated)	1.000† n.a.
y_4	manufacturing personnel's experience in using your products (human)	0.896 5.286***
y_5	government job-training programs or credits aimed at processes which make or use the goods traded (human)	0.953 5.493***

MNCs' managers' perceptions of government policy consistency (η_3)

y_6	unexpected tariff, local content export quota or other trade regulation changes	1.190 7.748***
y_7	loss of business advantage due to government approval delays	1.107 7.405***
y_8	supplier unreliability due to government contract problems	1.000 n.a.

MNC's managers' perceptions of their affiliate's production and transactions cost advantage over potential sub-contractors (ξ_1)

x_1	economies of scale	1.000 n.a.
x_2	labor costs	1.212 12.005***
x_3	inventory costs	1.129 11.034***
x_4	risk that potential suppliers will become market competitors	1.053 10.001***

t-values are shown under parameter estimates.

†As latent variables are unobservable, units of measurement are arbitrary. Consequently, one parameter was set to unit value for each latent variable, in order to scale its measurement. Significance tests do not apply for these indicators.

* Significant at the $p \leq .10$ level, two-tailed
** Significant at the $p \leq .05$ level, two-tailed
*** Significant at the $p \leq .01$ level, two-tailed

Table 3

STRUCTURAL EQUATION MODEL ESTIMATION

Endogenous Variables	External Sourcing (η_1)	Transaction Specificity (η_2)	Policy Consistency (η_3)
Explanatory Variables			
MNCs' mgrs' perceptions of importance of government subsidized suppliers' transaction-specific investments (η_2)	0.265 1.665*	--	--
MNCs' mgrs' perceptions of government policy consistency (η_3)	--	-0.553 -4.124***	--
MNC's mgrs' perceptions of their affiliates' production and transactions cost advantages over potential suppliers (ξ_1)	-0.231 -1.967**	--	--
Single party dominance of government executive branch (ξ_2)	--	0.197 2.606***	0.178 2.868***
GDP per capita (ξ_3)	-0.185 -1.905*	--	0.392 5.349***
Legislative party fractionalization (ξ_4)	--	--	0.102 1.599

t-values are shown under parameter estimates.

Measures of over-all Goodness-of-Fit

Chi-squared (86 d.f.) = 93.09
Probability level = 0.282
Goodness-of-fit index = 0.905
Adjusted goodness-of-fit index = 0.664
Root mean square residual = 0.058
Total coefficient of determination for structural equations = 0.515

   * Significant at the $p \leq .10$ level, two-tailed
  ** Significant at the $p \leq .05$ level, two-tailed
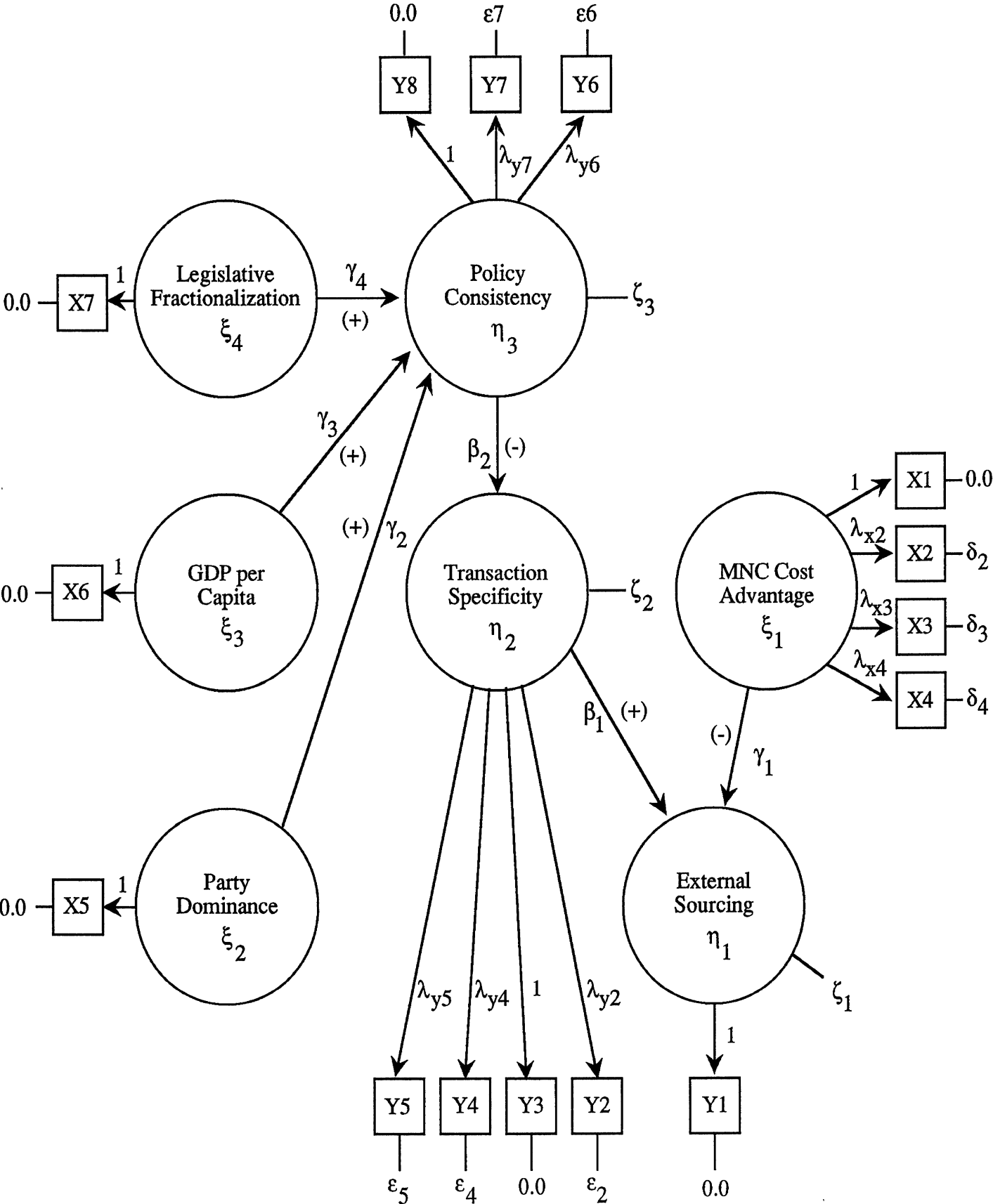 *** Significant at the $p \leq .01$ level, two-tailed

Figure 1: Path diagram depicting combined structural equation and measurement model, with hypothesized signs.