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Credible enticements

Can host governments tailor multinational firms' organizations to suit national objectives?

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This article 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 using data from a survey of 111 affiliates of MNCs operating in 36 countries.

1. Introduction

This study examines some effects of government policy inconsistency on the organization of multinational corporations (MNCs) and their external supply networks. Many states have implemented policies to own, subsidize, finance, guarantee financing, or provide preferences to fund domestic firms that supply intermediate or final goods to international firms [See Evans (1979); Duvall and Freeman (1981)]. These policies generally aim to entice foreign direct investment or to bend MNCs' operations to various national objectives. They may also seek to promote technology transfer, while reserving learning and profit opportunities in countries' international economic sectors for local interests. Some local firms may use these incentives to enter international markets, in effect renting their customers' global networks [Kogut (1983, p. 51)].

While publicly-funded supply incentives provide potential production cost

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savings to MNCs, state participation often increases their managers' perceptions of uncertainty. No matter how generous or apparently free-of-strings, these indirect subsidies 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, political phenomena such as elections, interest group rent-seeking, side effects, unadmitted intentions, bungling and national security contingencies may lead governments to unexpectedly alter policies.[1] Second, contracts may prove unenforceable, because states embody the enforcement mechanisms [Yarbrough and Yarbrough (1987); Grandy (1989)].

If governments unexpectedly reduce or withdraw assistence, suppliers may have little choice but to pressure for contractual renegotiation or release. Resulting production interruptions, price increases, or switching costs may ripple through MNCs' international systems, threatening their global competitive positions. For these reasons, 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 a firm's interests in the past, managers will be reluctant to enter such contracts without other guarantees. As Teece pointed out

> ... 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 (1986:41).

This study investigated circumstances where subsidized host country suppliers support their relationships with MNCs by making transaction-specific investments. Transaction-specific assets, by definition earn inferior returns if transferred from their intended uses to alternative applications or relationships. Examples include dedicated facilities or machinery such as model-specific auto body metal stamping dies that exclusively serve a customer. The article provides empirical evidence that such investments can function as credible commitments, by serving as hostages against unilateral supply disruptions [See Schelling (1960; Williamson (1983, 1985)].

[1]Many cases have been decumented in which developing host country governments contracted directly with MNCs to explore and extract natural resources, but demanded renegotiations once the firms established successful operations [See Mikesell (1971); Vernon (1971); Fagre and Wells (1982); Kobrin (1987); Gomes-Casseres (1990) and many others]. Vernon termed this dynamic 'the obsolescing bargain.' Lenway and Crawford (1986) have studied disruptions to international business transactions which take place when policy makers unexpectedly construe them as relevant to national security.

2. Model and methodology

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 uncertainty increases across countries, MNCs' managers should be expected to accord increasing importance to these suppliers' transaction-specific asset exposures.

Testing this hypothesis requires measurement of perceptual correlates of transactions costs and statistical tests of relationships among them. Perceptions, unlike variables such as prices, can not be observed. Instead, these are hypothesized as common factors or latent variables underlying observable indicators. Increasingly refined techniques have emerged in recent years for estimating the parameters of such models. The covariance structure model employed here can incorporate latent variables as either dependent or independent variables in systems of simultaneous, linear regression equations.[2] Its general form is the structural equation

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

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

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

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

where Λ_y and Λ_x are matrices of parameters and ε and δ are vectors of measurement errors.

Eqs. (2) and (3) constitute the measurement model. In this study, proposed latent variable indicators were incorporated into a questionnaire sent to MNC affiliate managers in 36 countries. Their responses provided data to test the indicators' reliability as latent variable measures. Then the combined structural equation and measurement model parameters were simultaneously estimated and tested for significance. Subsequent sections report details of each of these steps.

[2]Kmenta (1986, pp. 581–7), Deleeuw, Keller and Wansbeek (1983) and Aigner et al. in Griliches and Intriligator (1984) discuss econometric applications of such models. Long's guide (1983) helpfully reconciles discrepancies between psychometric and econometric statistical terminology.

2.1. The structural equation model and hypotheses

The structural model consists in three equations that construe external sourcing in host countries as a joint outcome of (1) MNCs' international competitive strategies, which rely on their production and transactions cost advantages over host country suppliers; (2) host states' policies to build competitive domestic suppliers and (3) organizational aspects of domestic politics that help states to maintain policy consistency.

I assume that MNCs' international strategies allocate their activities among countries, and between their affiliates' value-added chains and those of outside suppliers [Kogut (1985); Porter (1990)]. The resulting international goods and information exchange networks embody MNCs' firm-specific production and transactions cost advantages over host country firms and other MNCs (Dunning, 1988). MNCs gain production cost advantages by owning technology, managerial systems, raw materials sources, and optimal scale plants that can fill substantial proportions of demand in imperfect markets, and through their abilities to shift production among countries to reflect changing factor cost conditions [Kogut (1985)]. Transactions-cost advantages arise because MNCs' networks permit them to undercut market contracting costs, by coordinating economic activities within their organizations [Buckley and Casson (1976); Rugman (1981); Hennart (1982); Teece (1986); Dunning (1988)]. Optimal network configurations source all activities at least-cost sites around the world. In theory, MNCs' affiliates and local firms face the same factor cost conditions in a given host country. In practice, institutional details such as patterns of unionization can create differences. The following proposition necessarily holds, for a measure to control for MNCs' production and transactions cost advantages.

> $\boldsymbol{H_1}(\gamma_1)$ As MNCs' production and transactions cost advantages over external contractors increase, affiliates' outsourcing decreases.

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

State-funded local sourcing incentives aim to alter MNCs' optimal subcontracting levels. Assuming subsidized suppliers can equal or beat MNC's production costs, MNCs' managers must also consider transactions cost disadvantages attributable to the state's intervention. I assume that managers take subjective account of these costs, through introspection of their uncertainty concerning government policy consistency. I suggest that policy inconsistency diminishes or precludes sourcing from subsidized suppliers, unless the suppliers own transaction-specific investments that can credibly commit them to the relationships. Where perceived policy consistency minimizes such concerns, contracts may provide sufficient guarantees.

Transaction-specific investments assume less salience. Other factors held constant, therefore, the following hypotheses apply:

$H_2(\beta_2)$ Managers' perceptions of the importance of transaction-specific assets in relationships with subsidized suppliers associate negatively with perceived host government policy consistency.

$H_3(\beta_1)$ As managers' perceptions of the importance of transaction-specific investments in relationships with subsidized suppliers increases, affiliates' external sourcing increases.

The model also reflects propositions that associate MNCs' managers' perceptions of government policy consistency with directly observable organizational attributes of domestic politics. Details of this argument appear elsewhere [Murtha (1989, 1991)]. In summary, it proposes that policy consistency associates with (1) the tendency of the political party most persistently controlling the executive branch to succeed itself; (2) electoral rules that encourage 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. In the following structural system, eq. (6) reflects these propositions, eq. (4) reflects H_3 and H_1, and eq. (5) reflects H_2.

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

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

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

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

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

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

ξ_1 is a latent variable representing managers' perceptions of firm-specific cost advantages over local suppliers.

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

β_i represent parameter estimates on endogenous variables.

γ_i represent parameter estimates on exogenous variables.

ζ_i represent equation error.

2.2. The measurement model

The measurement equation for the dependent variables external sourcing (η_1), suppliers' transaction specific investments (η_2), and government policy consistency (η_3) is:

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

where the y_i are hypothesized observable indicators of η_1, η_2, and η_3, the λ_{yi} represent parameters to be estimated on the latent variables, and the ε_i represent measurement error. One element of the coefficient matrix Λ_y is constrained to 1 for η_2, and η_3, in order to scale their measurement units.[3] The same holds true for Λ_y element (1, 1), which corresponds to the single indicator parameter on the variable η_1 for external sourcing.[4]

The y_i pertain to questionnaire data. The formula given respondents to guide estimation of external sourcing (η_1) 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.

Indicators $y_2 - y_5$ refer to the importance of state-funded suppliers' transaction-specific assets (η_2). Respondents identified subcontractors with host government subsidies, loans, equity or contracts with state-owned enterprises, and evaluated the importance in these relationships of three types of transaction-specific investments [See Williamson (1985, p. 55)]. If govern-

[3]As latent variables are unobservable, measurement units must be arbitrarily scaled. Corresponding measurement error terms are set to zero.

[4]Single indicator variables are assumed directly observable. The estimation procedure does not regard them as representing underlying factors, nor take measurement error into account, but enters them diretcly into the regression analysis.

ment 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-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).

Indicators $y_6 - y_8$ refer to perceptions of government policy consistency (η_3). On a 5-part scale, respondents noted the frequency over 5 years of government policy changes which negatively affected their businesses. Items were

y_6 unexpected tariff, local content, export quota or other trade regulation changes.
y_7 loss of busines advantage due to government approval delays.
y_8 supplier unreliability due to government contract problems.

The measurement equation for the independent latent variable for firm specific cost advantage (ξ_1) and the independent observable political variables ξ_2, ξ_3 and ξ_4 is

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

where the x_i are latent and non-latent ξ_i indicators, the λ_{xi} are parameter estimates and the δ_i are measurement errors.

Indicators $x_1 - x_4$ pertain to questionnaire data on MNCs' affiliates' production and transactions cost advantages (ξ_1). Respondents scored their affiliates' highest-cost value-chain activity on factors relevant to subcontracting it to a competent local supplier or market entrant. The six-step scale ranged from strongly favoring outside supply to precluding it. Items were

scale economies (x_1), labor costs (x_2), inventory costs (x_3) and risk of potential suppliers becoming market competitors (x_4). 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 the percentage of months in which the dominant party held office from January, 1946 through December 1986. 'Dominant party' is defined as the party holding the office for the most time since World War II.

Government financial strength (x_6) may be evaluated relative to either the domestic private sector, or to other states. The model was alternately estimated using per capita gross domestic product to measure the latter, and central government revenue as a percentage of GDP to measure the former.[5]

The measure x_7 refers to Rae and Taylor's legislative party fractionalization (1970), defined as the probability that two random draws from a national legislature will yield members of different political parties.[6] High values associate with proportional representation electoral rules.[7] Proportional representation encourages legislative parties to multiply, so that their viabilities as governing parties depend on participation in coalitions. This condition places a premium on consensus and long-term working relationships that cut across party lines [See Lijphart (1984); Katzenstein (1984)].

Fig. 1 presents the combined structural equation and measurement model in conventional schematic form. Circles represent structural equation variables; squares represent measurement indicators. Greek notation is as specified above.

3. Results

In this section, I discuss the study's field work, latent variable reliability tests, model estimation, and results.

3.1. Field work

Between November, 1986 and June, 1987, I mailed a questionnaire to 203

[5]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.

[6]The statistic was calculated for legislatures as of 1986.

[7]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 Lijphart (1984).

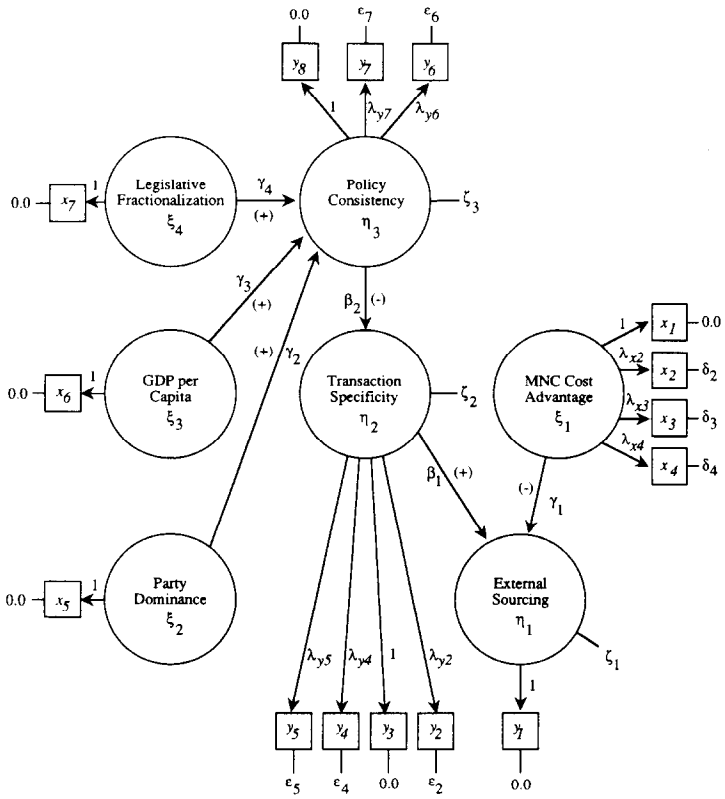

Fig. 1. Path diagram depicting combined structural equation and measurement model, with hypothesized signs.

foreign affiliates of 23 U.S. non-defense manufacturing MNCs.[8] One hundred and twenty-nine responded. Of these, 111 individual company responses proved usable. These represent 15 industries in 36 countries. Table 1 presents the country list. The industries are 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.

[8]The questionnaire was designed and pretested as part of this study. 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).

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: Columbia (1) Indonesia (1) Thailand (1) Zimbabwe (1)
4.	*Low-income economies*: India (1) Kenya (2) Pakistan (1)

3.2. Latent variable reliability

After completing the survey, I chose sets of indicators for each latent variable from the questionnaire, in accordance with prior intention and ex post inspection of the survey data. These were submitted to confirmatory factor analysis, to establish their reliabilities as measures. Reliability, in this context, refers to the ratio of common to overall variance in a set of indicators, explained by an hypothesized underlying common factor. Levels of 0.6 or above meet conventional standards [Bagozzi and Yi (1988)].[9] Reliabilities are 0.732, 0.832 and 0.927, respectively for the indicators chosen for η_2, η_3 and ξ_1.

3.3. Parameter estimation and results

The combined structural equation and measurement model parameters were estimated using a full information maximum likelihood (FIML) computational procedure.[10] Tables 2 and 3 present the results of the last of two rounds of estimation. In the first round, no zero restrictions were imposed on the exogenous variables' coefficient matrix. This procedure uncovered several unpredicted significant (at $p \leqq 0.10$) relationships among the structural equation variables. The second round estimated the model presented in section 2, augmented to include the significant relationships uncovered in round one.[11]

Table 3 presents the structural equation parameter estimates, t tests of significance and the chi-square test of overall model goodness-of-fit. Table 2

[9]Bagozzi (1980, pp. 176–183) provides details of the calculation.

[10]Estimation used the LISREL computer program [Joreskog and Sorbom (1988)].

[11]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, pp. 34–36)].

Table 2

Measurement model estimation.

Latent variables and indicators (y, x)[a]	
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[b] 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***
MNC's 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***

[a]t-values are shown under parameter estimates.

[b]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 $p \leqq 0.10$ level, two-tailed.

**Significant at the $p \leqq 0.05$ level, two-tailed.

***Significant at the $p \leqq 0.01$ level, two-tailed.

presents coefficient estimates and t tests of significance for the regression of the indicators in the latent variables.[12]

Estimation and test results supported the main hypotheses that transaction-specific asset exposures can offset MNCs' reticence to enter relationships with suppliers funded by host states with inconsistent policies. All coefficients of the observable indicators on the latent variables were

[12]Regressions of indicators on latent variables may be interpreted as factor loadings. T-tests of significance are reported because confirmatory factor analysis requires sets of indicators to be selected a priori, subject to statistical support as hypothesized observable correlates of each latent variable.

Table 3

Structural equation model estimation.[a]

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***	–
MNCs' 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 factionalization (ξ_4)	–	–	0.102 1.599
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			

[a]t-values are shown under parameter estimates.
*Significant at the $p \leqq 0.10$ level, two-tailed.
**Significant at the $p \leqq 0.05$ level, two-tailed.
***Significant at the $p \leqq 0.01$ level, two-tailed.

positive and significant. Unambiguous support emerged for the expected negative relationship between perceived government policy consistency and importance of state-funded suppliers' transaction specific assets (H_2 on β_2 in eq. (5); $t = -4.124$, $p \leq 0.01$). Transaction specific assets also proved positive and significant at $p \leqq 0.10$ in the external sourcing equation (H_3 on β_1 in eq. (4)). The control variable, firm-specific cost advantage displayed the expected negative sign, and was significant at $p \leqq 0.05$.

The country political organizational variables, single party dominance and GDP per capita performed as expected in eq. (6) for policy consistency, significant at $p \leqq 0.05$ and 0.01, respectively. Legislative party fractionalization did not perform. In addition to the expected relationship of eq. (6), party dominance proved positive and significant ($p \leqq 0.01$) in the transaction specificity eq. (5), while GDP per capita was negative and significant ($p \leqq 0.10$) in eq. (4) for external sourcing.

Central government revenue as a percentage of GDP was substituted for GDP per capita in an alternative model specification. In these results (not reported here), all hypothesized variables in the augmented model, including legislative party fractionalization took their expected signs and were significant at $p \leqq 0.05$ or better. In addition, the revenue measure proved significant in the asset specificity eq. (5). The GDP per capita formulation, however, significantly outperformed the alternative in tests of overall model fit, and held a 15 percentage point advantage in total R^2 (0.365 compared to 0.515).[13]

Overall goodness-of-fit statistics, on balance, favor accepting the model as adequate. The chi-square value of 93.09, 86 degrees of freedom, suggests that the data fail to reject the model at a probability level of 0.28. Root mean square residual was 0.058, and Joreskog and Sorbom's adjusted goodness-of-fit ratio was 0.664. These last two results fall short of conservative ideals of 0.05 and 'about 0.9,' [Bagozzi and Yi (1988)].

3.4. Discussion

Support for the key hypotheses rests on a few relationships embedded in a multiple equation system. The model's relative complexity represents a tradeoff between parsimony, and the ability to identify relationships suggested by theory within the institutional setting that imparts their main applied interest. Indeed, the surprising relationships of single party dominance to transaction-specificity (positive), and of GDP per capita to external sourcing (negative) suggest interesting ways to qualify and elaborate the main argument.

High party dominance values typify newly-industrialized authoritarian and single-party states, but only a few industrialized democracies, such as Japan, Italy and Sweden. The positive party dominance/asset specificity relationship, therefore, implies that government policy inconsistency may pose a greater threat to agreements in developing countries than in industrialized countries. Yet this relationship and the positive party dominance/policy consistency relationship seem contradictory, given the negative relationship observed between policy consistency and asset specificity. Consistent local content regulations may offer one explanation. The latent variable representing asset specificity in state-subsidized supply relationships may take non-zero values

[13]I interpret the revenue measure to represent state financial strength as a domestic political organizational phenomenon and GDP per capita as a measure of relative international strength. The two measures are not correlated. In estimation of the alternative model specification, central government revenue also entered the asset specificity equation with positive sign. 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 of the types of state intervention captured in the transaction-specificity equation. Estimation results for the alternative model may be obtained from the author.

relatively more often under authoritarianism, simply because these states consistently intervene in their economies. Limited experience may lead MNCs to weigh supplier asset-specificity more heavily in developing countries, irrespective of the government's record. In rapid industrialization, economic events may outrun institutional arrangements and foreign investors' perceptions formed in the past. Time-series analysis might demonstrate that as economies develop, both policy inconsistency and the importance of asset specificity diminish.

High GDP countries tend to be economically and politically advanced industrialized democracies. Substituting GDP for the alternative revenue measure of state financial strength yielded a relatively large γ and t-statistic ($\gamma = 0.392$; $t = 5.35$, $p \leqq 0.01$ and increased R^2), but greatly attenuated almost every other equation parameter estimate. These factors imply that GDP or correlated factors play important roles in determining MNCs' external sourcing in countries. But the discovery of a negative relationship contradicts intuition, given the relative vitality of many of these economies.

Several factors may skew MNCs' external sourcing away from industrialized countries, and toward developing countries. Local content rules and/or political instability may lead MNCs to outsource rather than own facilities in developing countries to take advantage of lower factor costs, including wages. External sourcing minimizes exposure to coercive measures including expropriation, and maintains network flexibility. This explanation complements findings that suppliers' transaction-specific assets can substitute for government policy consistency. In the absence of such assurances, more flexible MNCs may choose to outsource elsewhere.

The findings also have implications for governments' strategies to attract foreign direct investment and tailor MNC performance to national priorities. Robinson's survey evidence (1983) implied that governments often pay MNCs to take actions that they would have taken anyway, because managers net out government incentives when they make strategic decisions. The managers reason that the undertakings must meet company objectives even if governments change their policies. Up-front credible enticements such as site-specific infrastructural investments, subsidizing suppliers' dedicated facilities or funding highly-specific worker training may have a greater impact on MNCs' decisions, than cash subsidies paid out over time. They may also meet a higher standard of domestic political acceptability.

4. Conclusion

This article applied transactions cost economics to empirically analyze the effects of governments' policies on MNCs' organization structures. Organization structure here refers to consequences of MNCs' decisions about whether to locate activities within affiliates' organizations, or to purchase them from

independent subcontractors. Previous empirical studies of MNC/host state interaction have concerned direct, bilateral bargaining and usually used affiliate ownership structure as dependent variables [See Mikesell (1971); Vernon (1971); Fagre and Wells (1972); LeCraw (1984); Kobrin (1987); Gomes-Casseres (1990)].

This article shares this literature's concern with the apportionment of property rights, but seeks a more detailed elaboration of institutional arrangements among MNCs, host states, and other host country actors. Previous studies have modeled interaction between aggregate host country interests and MNCs over shares in affiliates' income streams. These host country interests include taxes and royalties that accrue to the state, and equity stakes that may accrue to either states or private individuals. This study separated host country public and commercial interests, and modeled interactions with foreigners over rights to perform production activities. This approach permitted third parties in host countries – MNCs' suppliers – to be explicitly included.

This study, although it pertained to a particular class of transactions, provides an empirical basis to speculate on a range of circumstances where MNCs' local transactions become dependent on host governments' plans and agreements that they did not negotiate, and that can not be enforced. 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, private commercial organizations have murky, black-market pasts, and markets have short histories.

References

Aigner, Dennis, Cheng Hsiao, Arie Kapteyn and Tom Wansbeek, 1984, Latent variable models in econometrics, in: Z. Griliches and M.D. Intrilligator, Handbook of econometrics vol. 2 (North-Holland, Amsterdam) 1317–1393.

Bagozzi, Richard P., 1980, Causal models in marketing (Wiley, New York).

Bagozzi, Richard P. and Youjae Yi, 1988, On the evaluation of structural equation models, Journal of the Academy of Marketing Science 16, 74–79.

Boddewyn, Jean J., 1988, Political aspects of MNE theory, Journal of International Business Studies 19, 341–364.

Buckley, Peter J. and Mark Casson, 1976, The future of the multinational enterprise (MacMillan, London).

Conference Board, The, 1986, Key company directory, Yvonne Burnside, project editor (The Conference Board, New York).

Deleeuw, Jan, Wouter J. Keller and Tom Wansbeek, eds., 1983, Interfaces between econometrics and psychometrics, annals of applied econometrics 1983-2. A Supplement to the Journal of Econometrics 22.

Dunning, John, 1988, The eclectic paradigm of international production: A review and some possible extensions, Journal of International Business Studies 19, 1–31.

Duvall, Raymond D. and John R. Freeman, 1981, The state and dependent capitalism, International Studies Quarterly 25, 99–118.

Evans, Peter B., 1979, Dependent development: The alliance of multinational, state and local capital in Brazil (Princeton University Press, Princeton).
Fagre, N. and Louis T. Wells, 1982, Bargaining power of multinationals and host governments, Journal of International Business Studies 13, 19–24.
Gomes-Casseres, Benjamin, 1990, Firm ownership preferences and host government restrictions: An integrated approach, Journal of International Business Studies 21, 1–22.
Grandy, Christopher, 1989, Can government be trusted to keep its part of a social contract?, Journal of Law, Economics and Organization 5, 249–269.
Hennart, Jean-Francois, 1982, A theory of the multinational corporation (University of Michigan Press, Ann Arbor, MI).
International Monetary Fund, 1986, International financial statistics (International Monetary Fund, Washington, DC).
Joreskog, Kark G. and Dag Sorbom, 1988, LISREL VII: A guide to the program and applications (SPSS, Inc, Chicago).
Katzenstein, Peter J., 1984, Corporatism and change: Austria, Switzerland and the politics of industry (Cornell University Press, Ithaca, NY).
Kmenta, Jan, 1986, Elements of econometrics (Macmillan, New York).
Kobrin, Stephen J., 1987, Testing the bargaining hypothesis in the manufacturing sector in developing countries, International Organization 41, 63–75.
Kogut, Bruce, 1983, Foreign direct investment as a sequential process, in: Charles Kindleberger and David B. Audretsch, eds., The multinational corporation in the 1980s (MIT Press, Cambridge).
Kogut, Bruce, 1985, Designing global strategies: Comparative and competitive value-added chains, Sloan Management Review 25, 15–28.
LeCraw, Donald J., 1984, Bargaining power, ownership and profitability of transnational corporations in developing countries, Journal of International Business Studies 15, 27–43.
Lenway, Stefanie A. and Beverly Crawford, 1986, When business becomes politics: Uncertainty and risk in east–west trade, Research in Corporate Social Performance and Policy 8, 29–53.
Lijphart, Arend, 1984, Democracies: Patterns of majoritarian and consensus government in 21 countries (Yale University Press, New Haven).
Long, J. Scott, 1983, Covariance structure models: An introduction to LISREL (Sage, Beverly Hills).
Mikesell, R.F., 1971, Foreign investment in petroleum and mineral industries: Case studies of investor–host country relations (Johns Hopkins Press for Resources for the Future, Baltimore).
Murtha, Thomas P., 1989, Credible enticements: Public policy contingencies and enforceability in multinational subcontracting, Unpublished doctoral dissertation (New York University, New York, NY).
Murtha, Thomas P., 1991, Surviving industrial targeting: State credibility and public policy contingencies in multinational subcontracting, Journal of Law, Economics and Organization 7, 117–143.
Porter, Michael E., 1990, The competitive advantage of nations (The Free Press, New York).
Rae, Douglas and Michael Taylor, 1970, The analysis of political cleavages (Yale University Press, New Haven).
Robinson, Richard, 1983, Performance requirements for foreign business: U.S. management response (Praeger, New York).
Rugman, Alan M., 1981, Inside the Multinationals (Columbia University Press, New York).
Schelling, Thomas, 1960, The strategy of conflict (Harvard University Press, Cambridge).
Teece, David J., 1986, Transaction costs economics and the multinational enterprise: An assessment, Journal of Economic Behavior and Organization 7, 21–45.
Vernon, Raymond, 1971, Sovereignty at bay (Basic Books, New York).
Williamson, Oliver E., 1983, Credible commitments: Using hostages to support exchange, The American Economic Review 73, 519–540.
Williamson, Oliver E., 1985, The economic institutions of capitalism (Free Press, New York).
Yarbrough, Beth V. and Robert M. Yarbrough, 1987, Cooperation in the liberalization of international trade: After hegemony, What?, International Organization 41, 1–26.