

**The Performance Implications
of Asset versus Transactional Advantages of MNEs**

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Abstract

The current paper found no significant relationships between performance and the degree of a MNE's foreign direct investment. The current paper did find a significant positive association between performance and the degree to which a MNE internalizes its intermediate product market. However, this latter relationship also appears to be mediated by the industry in which the firm is embedded.

I. Introduction

Despite rapid advances in the theory of the Multinational Enterprise (MNE), understanding of the performance implications of multinational expansion remains limited (Grant, 1987). Results from previous studies exploring the relationship between performance and multinational expansion have often been inconclusive or contradictory (e.g., Geringer, Beamish, & daCosta, 1989; Kim, Hwang, & Burgers, 1989). The present paper attempts to improve upon prior research in two ways. First, while the majority of previous studies have tended to focus on the asset advantages or ownership advantages of MNEs (Dunning, 1983), this paper will explore the transactional advantages of the MNE (Dunning, 1983; Buckley, 1983). Second, prior research has often aggregated data across numerous industries, thus potentially compounding or masking true relationships of important subsamples (Hatten & Schendel, 1978). In contrast, this paper adopts a contingency perspective and explores differences across industries in the performance implications of the asset and transactional advantages of MNEs.

II. Theory and Hypotheses

A number of theories have been developed that attempt to explain a firm's motivation for expanding beyond its home country (see Calvert, 1988 for a review). Most of these theories are based on the neoclassical economics assumption that firms are rational,

profit-maximizing entities with unlimited access to costless knowledge of, and the ability to take advantage of, attractive opportunities wherever they exist (Robock & Simmonds, 1989). According to this model, international expansion will lead to superior firm performance.

As an alternative to the rational model, other theorists have described a firm's decision-making process as being affected by the cognitive limitations of the management team (Cyert & March, 1963); power (Pfeffer, 1981), and structural inertia (Hannan & Freeman, 1984). As such, MNEs may have a more limited geographical horizon than most normative literature assumes (Aharoni, 1966). Moreover, the optimal foreign opportunity may lie beyond that horizon, causing firms to invest in overseas operations which may not be profit-maximizing (March & Simon, 1963). According to this second model, international expansion per se may not automatically lead to superior performance (Rugman, 1983).

Results from past empirical work on the performance implications of the amount of a firm's international expansion lend support to the "bounded rationality" prediction that superior performance is not necessarily the outcome of international expansion. For example, several studies have found a positive association between the scale of a firm's international expansion and performance (Bergsten, Horst, & Moran, 1978; Daniels & Bracker, 1989; Geringer, Beamish, & daCosta, 1989). However, others (e.g., Michel &

Shaked, 1986) have found that domestic firms have significantly superior performance than firms with extensive overseas operations. Finally, among those studies which use multivariate analysis to take into account the effects of firm size, advertising and research intensity, and industry membership (e.g., Buckley et al, 1978), most show that overseas expansion tends to be either insignificantly or negatively related to performance (Grant, 1987).

Asset versus Transactional Advantages

Market imperfections theories (e.g., Hymer, 1976) argue that a foreign investment decision is made as a move to take advantage of certain MNE capabilities not shared by local firms. The MNE must possess advantages which cannot be imitated without substantial cost and risk (Geringer, et al., 1989) by local competitors because a firm which is contemplating international expansion faces a number of additional costs and risks to operate successfully in foreign areas. Moreover, these advantages must be transferable within the enterprise and across distances. These competitive advantages (Porter, 1986) are often referred to as firm-specific or ownership factors (Dunning, 1988).

Previous research on the performance implications of international expansion have at least implicitly measured firm-specific advantages as the amount of a MNE's investment

in foreign assets. While seemingly appropriate, a number of other advantages are associated with multinational expansion. For example, in his eclectic theory of the MNE, Dunning (1983) distinguishes, among other things, between the asset and the transaction advantages of MNEs. The former arise from the ownership of foreign assets, the latter mirror the capacity of MNE hierarchies vis-a-vis external markets to capture the transactional benefits (or less on the transactional costs) arising from the common governance of a network of these assets (Dunning, 1988).

While imperfect markets theories tend to apply the transactional advantages of MNEs to the final-product markets, the 'theory of internalization' (Buckley, 1983) focuses on imperfections in intermediate product markets (Buckley, 1988). Using the term internalization as opposed to transactional advantages, Buckley argues that "The act of internalizing a market is undertaken to increase profit and as a strategic move, it confers an advantage on the internalizing firm and by definition disadvantages others" (Buckley, 1988 p. 181). Internalization, then, because it reduces transactional costs, should lead to higher firm performance. This leads to our hypothesis:

Hypothesis #1	There will be a positive relationship between the degree to which a firm internalizes the intermediate product market and performance.
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Recently, there have been a number of calls in strategic management literature for researchers to incorporate a contingency perspective when exploring various phenomena

(cf. Gupta, 1989; Hambrick, 1981). Yet, there appears to be a tendency in research in international management to aggregate data across numerous industries thus potentially compounding or masking true relationships of important subsamples (Hatten & Schendel, 1978). While there have been attempts to disaggregate samples into more meaningful subgroups (cf. Daniels & Bracker, 1989), shortcomings in the methods of statistical analysis employed have made the conclusions derived from these subsamples tentative. Therefore, although no specific hypotheses are generated, the current paper applies a contingency perspective by analyzing the relationships between the degree to which a firm internalizes its intermediate product market and performance for different industry subgroups (firms competing in the same industry) in our sample.

III. **Methods**

Overview. Our data was compiled from three sources: the list of the 500 largest U.S. corporations reported annually in Fortune magazine, compustat tapes, and data on MNEs gathered previously by Stopford & Wells (1982). This data is frequently utilized by managers, analysts, and researchers and ensures a high degree of compatibility to a number of recent studies. Since the nationality of firms determines the extent to which a firm is able to establish competitive advantage in overseas markets (Caves, 1982), we controlled for country of origin by looking exclusively at U.S. based MNEs. Data on each firm was collected for a five year period from 1977 to 1981.

Sample. A sample of U.S. based MNEs was first compiled from the list of the top 500 companies in Fortune magazine (1978), and from that list we selected those firms that were also listed in Stopford & Wells (1982) World Directory of Multinational Enterprises. Firms were classified by industry according to Fortune magazine. An attempt was made to incorporate a broad spectrum of industries, including vertically integrated process industries (e.g., petroleum refining), knowledge-intensive industries (e.g., computers and pharmaceuticals), or those requiring quality assurance-dependent products (e.g., manufacturing) (Casson, 1986). Therefore, our sample consists of 113 of the largest firms from 7 industries (20 packaged foods firms, 9 computer & office equipment manufacturers, 14 electric equipment manufacturers, 17 chemical firms, 16 pharmaceutical companies, 19 industrial & agricultural equipment manufacturers, and 19 petroleum refining firms). With five years of data available for each firm our overall sample contained 565 observations.

Degree of Internalization. We defined the degree to which a MNE internalizes its intermediate product market as the ratio of foreign sales to foreign assets (Robock & Simmonds, 1983). A higher ratio signifies a higher degree of overall market internalization while a lower ratio signifies a lower overall degree of market internalization. We contend that this ratio is an appropriate measure of a MNE's ability or proclivity to internalize its markets since 1) the reporting of foreign sales by MNE

often includes the amount of intra-firm transfers (see Stopford & Wells, 1982); 2) most foreign production is sold abroad rather than being imported back into the U.S. (Daniels & Bracker, 1989); and 3) overseas sales, via exports, are generally not included in these figures. To control for the effects of inflation, which tend to impact sales more than assets (see Geringer, Beamish, & daCosta, 1989) we deflated yearly sales figures by the U.S. consumer price index before calculating the ratios. The U.S. CPI was deemed meaningful since all of the MNEs in this sample are U.S. based.

Performance. Firm performance was measured as corporate return on sales (ROA), and defined as net income before extraordinary items, divided by total assets. This is a common measure used in numerous studies in this research area (e.g., Daniel & Bracker, 1989) and one which has been shown to be highly correlated with other performance measures (e.g. ROE, ROI). It was also selected because it is comparable to our measure of the degree of internalization which is also asset based.

Control Variables. Three control variables were included in the data analysis. First, to be consistent with previous work in this research stream, we included a measure of the amount of the degree of a MNE's foreign direct investment (FDI). We used foreign assets as a percentage of total assets as an indicator of the degree of overseas investment. While the percentage of foreign sales to total sales could also be used, an assets-based measure is consistent with a number of similar studies (e.g.,

Daniel & Bracker, 1989). Second, organizational theorists (e.g., Hannan & Freeman, 1977; Aldrich, 1979) argue that organizational performance is often constrained by a variety of internal and external forces. For example, they suggest that current performance is often highly related to the size of the organization. Therefore, we included a measure of size (defined as the log of the number of employees) as a control variable in our analysis. In addition, Hannan & Freeman (1977) and Aldrich (1979) contend that current performance is at least partially a function of past performance. Therefore, a one year lag of firm performance (performance figures were gathered for the year 1976) was incorporated as a control variable in our analysis.

Statistical Procedure. Prior research in this area has generally applied ordinary least squares (OLS) regression after calculating the means of the variables of interest over a specific time period. For example, prior studies have explored the relationship between a five year average of an organization's degree of foreign assets with a five year average of a firm's performance. The current paper, however, pooled the time series data, thereby increasing the total number of observations in hopes of producing a richer picture of the phenomenon. However, since estimates derived from the use of OLS on pooled time series data can be suspect (Hannan & Young, 1977) the authors chose a generalized least squares regression (GLS) technique. In addition, we incorporated an iteration procedure that adjusted for autocorrelation and heteroscedasticity (Kmenta, 1986). Such a procedure handles both the time and firm-

specific components of the error term.

IV. Results

Means and standard deviations appear in Table 1. Prior to testing Hypothesis 1, we regressed firm performance on the three control variables only. As shown in equation 1 of Table 2, firm size ($n=565$, $r=.1203$, $p<.01$) and past performance ($n=565$, $r=.7548$, $p<.01$) were both positively related to firm performance. However, the current paper found no significant relationship between the amount of foreign direct investment (FDI) and firm performance.

Recently, there has been a movement in the field supporting the concept of an optimal level of firm FDI. That is "the advantages of 'more is better' should hold only until a MNE reaches some optimum combination of domestic to foreign operations" (Daniels & Bracker, 1989: 49). Therefore, drawing on the work of Geringer, et al., (1989), additional analysis was conducted to test potential curvilinear relationships between amount of foreign direct investment and performance.¹ However, no significant coefficients were found to suggest that a curvilinear relationship exists between the

¹ To do this, we first derived the median level of firm FDI for the total sample. Next, we computed both the square and the absolute value of the difference between a firm's FDI and the industry average. Finally, we twice reran the initial model substituting the original value of a firm's FDI with these new values.

amount of a MNE's FDI and firm performance.

To test Hypothesis 1, we regressed firm performance on four variables, the three control variables and our measure of internalization. Results shown in equation 2 of Table 2 indicate significant positive coefficients for firm size ($r=.1124$, $p<.01$), past performance ($r=.7560$, $p<.01$), as well as the degree to which a MNE has internalized the intermediate product market ($r=.0569$, $p<.01$). These results would lend support to our hypothesis that there exists a positive relationship between the degree to which a MNE internalizes the intermediate product market and firm performance.

While no specific hypotheses were generated, we performed an additional test exploring the relationship between the degree to which a MNE internalizes its intermediate product market and firm performance across industries. To do this, we computed dummy variables (0,1) for six of the seven industries. We then multiplied our measures of firm size, FDI, and degree of internalization by each of the six industry dummies and entered these variables into the model. With the exception of firm size in the pharmaceutical industry ($r=-1.285$, $p<.01$) results shown in Table 3 give no indication of any significant relationships between firm size and firm FDI with firm performance in any of the industries tested. However, as for the relationship between the degree to which a firm internalizes its intermediate product market and firm performance, the results shown in Table 3 indicate a more interesting and complex picture. Specifically,

results in Table 3 show a significant positive association between internalization and performance in the computer & office equipment industry ($r=.1775$, $p<.10$), the pharmaceutical industry ($r=.2385$, $p<.01$), and the food processing industry ($r=.4982$, $p<.01$); no relationship between internalization and performance in the petroleum refining industry; and a significant negative association between internalization and performance in both the electrical equipment manufacturers ($r=-.3091$, $p<.01$) and the industrial & agricultural equipment manufacturers ($r=-.2987$, $p<.01$).

V. Discussion and Conclusions

Several conclusions can be drawn from this study. First, analysis conducted on the full sample found support for our hypothesis that there exists a positive relationship between the degree to which a firm internalizes its intermediate product market and firm performance. These results would appear to lend support to theories of market imperfections (e.g., Hymer, 1976) that argue MNEs have firm-specific advantages (Dunning, 1988; Porter, 1986) that allow them to compete successfully against local competitors. Specifically, the degree to which a firm can internalize the intermediate product markets confers an advantage on the internalizing firm (Buckley, 1988).

However, the conclusions reached above may not apply to all firms in all industries.

Specifically, our additional analysis indicated that the relationship between the degree to

which a MNE internalizes its intermediate product market and firm performance is contingent on the industry in which the firm is embedded. Results show a significant positive association between internalization and performance in the computer & office equipment industry, the pharmaceutical industry, and the food processing industry; no relationship between internalization and performance in the petroleum refining industry; and a negative association between internalization and performance in both the electrical equipment manufacturers and the industrial & agricultural equipment manufacturers.

These results would appear to support the contention that the performance implications of the degree to which a MNE internalizes its intermediate product market vary according to the characteristics of firms, and the industries in which they operate (Dunning, 1988). In addition, these results highlight a number of recent calls in the strategic management literature for researchers to incorporate a contingency perspective when exploring various phenomena (cf. Gupta, 1989; Hambrick, 1981). The tendency in research on international management to aggregate data across numerous industries, thus potentially compounding or masking true relationships of important subsamples (Hatten & Schendel, 1978), may be a significant shortcoming in past work.

Second, the results do not appear to support a hypothesis that the amount of a MNE's FDI is positively or negatively related to firm performance. This result would seem to

reflect the equivocality in past research that has investigated this phenomenon. Third, though several authors have argued for the existence of an optimal level of firm FDI and have offered tentative support such a curvilinear relationship (Daniels & Bracker, 1989; Geringer, et al., 1989), the current study did not find any evidence of a 'threshold' effect for a firm's level of FDI. However, differences between the current study and past research in the analytical procedures employed may explain the disparity in outcomes. The current study used a GLS technique, in addition it controlled for the impact of firm size and past performance on firm performance. Previous work (e.g., Geringer et al., 1989) separated their sample into several categories based on a firm's level of FDI and performed anovas to test for differences in performance across categories. However, those works did not control for the impact of firm size or past performance, both of which the current study has shown to influence firm performance.

Before concluding, mention should be made of some of the limitations of the current study. First, our data is limited to a five-year time span which may not adequately capture the continuously changing dynamic processes that characterize the industrial structure of many of these markets (Buckley, 1988). Second, the current study, along with most prior research of this kind, measures only the scale of a MNE's FDI and addresses neither the geographic dispersion of a firm's FDI or type of FDI. Finally, our measure of the degree to which a MNE internalizes its intermediate product market is a rough estimate and further refinements are needed. The intermediate product market

may be just one of a number of areas that a MNE may internalize. For instance, a MNE may internalize the technology and industrial propriety rights, such as trademarks, that are not accompanied by FDI. This could be important since international trade in intangibles such as these has become a significant component of international business activity (Robock & Simmonds, 1983).

In conclusion, while there appears to be a significant positive relationship between the degree to which a MNE internalizes its intermediate product market and firm performance, this relationship may not be universal. Specifically, the above relationship can be mediated by the industry in which the MNE is embedded. In addition, no significant linear or non-linear relationships were found between the degree of a MNE's FDI and firm performance. In short, it is not the degree of a MNE's FDI per se that results in higher performance, but the internalization of the intermediate product market which occurs with geographic dispersion that has an impact on MNE performance. Therefore, as Robock & Simmonds (1989) argues, any measure that can capture the degree to which a MNE internalizes its markets may be a more meaningful and a better predictor of performance than measures of direct investment.

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Table 1

Means and Standard Deviations of Primary Variables

	Means	Std
N=565 ²		
ROA	.033	.019
Firm Size (log of # of employees)	7.746	.9967
Amount of Foreign Direct Investment	.26	.13
Degree of Internalization	.689	.719

² N, the number of observations, equals the number of firms (141) times five years of data per firm.

Table 2**GLS Estimates with Performance as Dependent Variable****Standardized Estimates
(standard errors in parentheses)**

	1	2
N=565		
Firm Size	.1203*** (.0002)	.1124*** (.0002)
Amount of Foreign Direct Investment	.0154 (.0006)	.0453 (.0007)
Past Performance	.7548*** (.0280)	.7560*** (.0278)
Degree of Internalization		.0569** (.0009)
Constant	-.0022	-.0021
R-squared	.65	.66
F value	346.7***	261.8***

*** p<.01

** p<.05

* p<.10

Table 3**GLS Estimates with Performance as Dependent Variable, by Industry
Standardized Estimates (standard errors in parentheses)**

N=565

Firm Size	-.0057	(.0029)
Amount of Foreign Direct Investment	-.0948	(.0044)
Past Performance	.6544***	(.0301)
Degree of Internalization	-.1208	(.0084)
Computers & Office Machines - Firm Size	.2756	(.0029)
Amount of Foreign Direct Investment	.0795	(.0106)
Degree of Internalization	.1775*	(.0201)
Electrical Equipment Mfgers - Firm Size	-.2984	(.0021)
Amount of Foreign Direct Investment	-.0711	(.0028)
Degree of Internalization	-.3091***	(.0105)
Pharmaceuticals - Firm Size	-1.285***	(.0053)
Amount of Foreign Direct Investment	.1350	(.0077)
Degree of Internalization	.2385***	(.0125)
Industrial and Agri Equipment - Firm Size	-.1440	(.0017)
Amount of Foreign Direct Investment	-.0154	(.0024)
Degree of Internalization	-.2987***	(.0066)
Oil Refining - Firm Size	-.3070	(.0020)
Amount of Foreign Direct Investment	-.0152	(.0026)
Degree of Internalization	-.0199	(.0076)
Food Processing - Firm Size	.0390	(.0016)
Amount of Foreign Direct Investment	.0705	(.0019)
Degree of Internalization	.4982**	(.0056)
Chemical - Firm Size	-.6657***	(.0012)
Amount of Foreign Direct Investment	.3858***	(.0026)
Degree of Internalization	-.2639	(.0056)
Constant	-.0024	
R-squared	.78	
F value	50.129***	

*** p<.01, ** p<.05, * p<.10