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## EFFECT OF FIRM SIZE AND INTERNATIONAL STRATEGY ON PERFORMANCE

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Entry into the international marketplace is a frequently recommended strategy for small to medium size businesses. Not only are they faced with the patriotic fervor of government agency representatives suggesting that their market participation would benefit the overall national economic situation [12], but they view with alarm or envy the professed improved growth and profitability of large multinationals.

Only 10% of U. S. export sales are made by small businesses even though the General Accounting Office projects a potential export sale market for companies with less than 250 employees to be \$4.2 billion annually [17]. This means that firms with less than a thousand employees could account for 51% of U. S. exports as opposed to the 16% they currently sell [14].

### **International Trade Benefits**

Many studies have examined the reasons companies choose to engage in foreign trade [20]. A firm may be pushed into international trading because there is a lack of opportunity in the domestic market. It can be pulled into international trade because someone perceives an opportunity abroad. Foreign opportunities include: 1) sales growth in a product/market which is in an earlier stage of the life cycle abroad than it is in domestically [21, 16 p. 193]; 2) a way to distract foreign competitors from entering or expanding in the domestic firm's home market [21, 22]; and 3) expansion of operations leading to the advantages of economies of scale, including the ability to spread research and development expenses over a greater number of units [1,2]. Foreign trade also provides a way to: meet actions of domestic competitors who are involved in international trading [22]; access foreign product innovation [1]; spread cyclical risk over additional and asynchronous markets [14]; and hedge against domestic business fluctuations [1].

Managements of small to medium sized firms are aware of these potential benefits. However, the threat of bottom line shortfalls is seen as imminently dangerous to those same organizations since smaller companies seldom have slack resources to absorb error. At the least, the ability to borrow funds in the future could be compromised by an ill conceived experiment in international trading. Mistakes in the development of foreign operations, therefore, can be fatal to the entire organization.

Smaller companies are concerned about the additional cost of doing business abroad. They have limited financial resources and question whether the investment in developing knowledge of the foreign market, the complex paperwork, as well as various trade

regulations and barriers would be worth the effort. They are faced with potentially expensive and risky decisions. Should they market directly to foreign buyers through their own overseas sales staff, rely on foreign nationals, or contract services with an export management firm? Would foreign direct investment be more effective or efficient? Should they adapt their products for the new market? The answers to those questions are influenced by the manager's interpretation of the profit potential for the firm.

Ultimately, small, medium, and large companies want their strategic choices to be profitable. The basic objective of profit making firms which venture into the international trading arena is the maximization of profits [8, 14]. If smaller firms could have some assurance that other companies had entered the foreign marketplace without damaging their profitability they would find the entry questions easier to answer.

The purpose of this study was to provide information regarding the effect of international practices on other firms to those small and medium size companies considering international expansion. The research question was: Does the size of the company interact with its international trading strategy to penalize the relative profitability of the firm in comparison with other industry members?

### **Firm Size and International Strategy**

There is a conceptual connection between the size of an organization, its choice of international strategy, and its ability to benefit from that choice [19]. Delacroix suggests there may be a size threshold which must be crossed before any international strategy can become successful for a firm. Terpstra [23] theorizes that a minimal size is essential for product development and market research. A minimal sales volume may be required for each product before international activity is feasible [15]. While theorizing that export sales were an important route to growth for the small to medium sized firm, Cooper and Kleinschmidt [9] found no relationship between international strategy chosen and size of firm. Furthermore, they did not find a significant relationship between size and export performance.

It is possible that the choice of strategy and size of firm interact and that this interaction helps to explain a differential rate of performance. What is an appropriate strategy at one end of a size continuum may be inappropriate at the other end.

Few studies have looked at the relationship of international trading and financial effects [1, 19, 22, 26, 32]. Performance is often defined, in fact, as the ability of a firm to sell more internationally rather than as a measure of economic benefit. This study attempts to provide some empirical information for both managers and academics who are interested in the competitive effect of the international decision. It concentrated on the financial success of domestic versus international traders.

### **Methodology**

There was no attempt in this study to suggest that international trading was the singular reason for a company's financial success or failure. This study was limited to an in-

vestigation of a single strategic choice variable, a single structural factor, the interaction of the two variables, and their effect on the dependent variable of financial performance. However, research into the effect of one of a few key variables can provide useful insights [4, 5].

### **Sample**

Data was gathered from secondary sources including 10Ks and annual reports. In order to constrain the effect of the environment, the analysis was done with data pooled from two related industries (Telephone and Telegraph Apparatus Industry SIC 3661 and Radio and Television Broadcasting and Communication Equipment Industry SIC 3663) rather than from a random selection across industries. This choice followed the recommendations of Benvignati [1] and Sarathy [22] who found that the inclusion of multiple industries confused the effect of the environment on research results.

Both industries were categorized as industrial goods manufacturers producing high technology products. Although consumer goods and services are also sold and produced abroad for foreign sale, they face more complex cultural and social issues in their businesses [9].

In addition, to maximize the likelihood of a significant relationship, the industries should possess products which lend themselves to international trading. According to industrial organization literature, the presence of intangible proprietary assets similar to the unique technical information generally associated with high technology products is a key reason that firms become involved in international trading [3 p.5].

The research period spanned the years 1981 through 1986. This series of years allowed an examination of the interaction of size and foreign trading strategy during a variety of international conditions including; both high and low relative dollar value; recession and recovery at differing domestic and international rates; the elimination of the tax incentives in the Domestic International Sales Corporations (DISCS); and the 1984 deregulation of the U. S. telephone industry.

In summary, firms included in the study were required to be: 1) publicly held; 2) single or dominant product line firms; and, 3) viable during the entire period of the study. Using these criteria for selection resulted in a sample of 88 firms drawn from the two industries. Table 1 contains a categorical breakdown of size/strategy of sample members.

### **Variables**

Performance was defined as the financial results of the firm as expressed in the corporate return on assets, return on sales, and return on stockholders equity. Although performance can be defined in terms of the identity and goals of a variety of stakeholders, financial measures are commonly used and widely accepted in the strategy/policy literature [16].

Each of the dependent variable measures resulted in data which was continuous and proportionate. The use of ratios acted to normalize the data and facilitated comparability among firms. The continuous scale also provided the appropriate form of data required by the statistical procedure: multiple regression.

The size of the firm was measured using annual net sales as reported in the 10K or annual report. The use of a firm's annual sales figure as a surrogate for size is a commonly accepted research approach to size measurement [2, 7, 18].

The measure provided appropriate interval, continuous data for use in the statistical analysis.

**Table 1**  
**Sample Membership**

	Size	Strategy		
		<u>Domestic</u>	<u>Export</u>	<u>Foreign Direct Investment</u>
1981	Small	8	5	0
	Medium	17	29	8
	Large	0	8	11
1982	Small	5	3	0
	Medium	17	26	9
	Large	2	14	12
1983	Small	4	4	2
	Medium	15	25	7
	Large	2	15	14
1984	Small	6	2	1
	Medium	15	24	7
	Large	2	15	16
1985	Small	5	0	2
	Medium	17	24	6
	Large	4	14	16
1986	Small	4	2	0
	Medium	19	21	9
	Large	4	14	15

Small = Sales less than \$5M

Medium = Sales between \$5M and \$50M

Large = Sales more than \$50M

Sales sizes classified for information only. Data was used as continuous intervals in statistical procedure. Size classifications based on Czinkota and Johnston [10].

Three international strategies were identified for the purposes of this study:

### 1) Domestic Strategy

Companies following this strategy are actively engaged in domestic marketing only. If they sell internationally it is a passive, occasional sale below the ten percent reporting level established by the Financial Accounting Standards. They have no foreign investment either in marketing or manufacturing.

## 2) Exporting Strategy

Companies classified as exporters only are essentially acting as international marketeers. They do not produce their product abroad for sale to unaffiliated foreign buyers.

## 3) Foreign Direct Investment Strategy

Companies are the majority owners of manufacturing companies which produce and sell their products abroad to unaffiliated foreign buyers.

An alternative measure of international trading involvement (Percentage Unaffiliated Foreign Sales) consists of the total reported export sales plus the total reported foreign subsidiary sales made to unaffiliated or noncompany related buyers as a percentage of the total sales made by the firm that year. This measure was found to correlate with the strategy classifications system described earlier in the range of Pearson's  $r = .82$  to  $.87$ . Although not a true substitute for the concept of a firm's strategy, the expectation was that firms using the strategy requiring the most commitment would also be the firms, overall, experiencing the greatest relative percentage of sales from that involvement.

## Analysis

The data was analyzed using hierarchical multiple regression correlation. The statistical procedure and model is described in Appendix A.

## Discussion

The analysis of the data indicated no significant difference in financial performance due to the interaction of firm size and the type of strategy used by the firm.

The results of this study suggest that a response to national calls for international trading should be based on company needs and constraints which were not included in this study. The findings indicate that participation in the international marketplace does not affect the financial returns of small or medium size firms differently than large firms.

However, international trading may provide less direct or obvious benefits than increased financial returns. For example, factory capacity can be maintained if products can be exported. This can result in the retention of a skilled workforce and continued operations during domestic recessions. Overseas subsidiaries may tap into research and development projects not easily accessed by foreigners. Internationally based manufacturing plants may produce not only for the foreign market but also provide a source of component parts for the domestic company as a captive supplier. None of these benefits necessarily results in increases in short term profitability.

For small and medium-size firms, this study implies that there is no greater financial risk associated with choosing an international trading strategy rather than a domestic strategy. They were not systematically singled negatively on the basis of size. Firm size appears as neither a handicap nor an advantage in determining the financial effect received from pursuing a particular international strategy. Since financial performance does not appear to be influenced by the interaction of size and strategy, the advisability

of employing international trading strategies should be evaluated using criteria other than size and should not automatically be ignored because a firm is small or medium size.

### References

1. Benvignati, M. "Domestic Profit Advantages of Multinational Firms." Journal of Business, Vol. 60, No. 3 (1987), pp 449-461.
2. Brasch, J. J. "Deciding on an Organizational Structure for Entry into Export Marketing." Journal of Small Business Management, Vol. 19, No. 2 (1981), pp. 7-15.
3. Caves, R. E. American Industry: Structure, Conduct and Performance. Englewood Cliffs: NJ: Prentice-Hall Inc. (1977).
4. Child, J. "Managerial and Organizational Factors Associated with Company Performance—Part I." The Journal of Management Studies, Vol. 11, No.3 (1974), pp. 175-189.
5. Child, J. "Managerial and Organizational Factors Associated with Company Performance—Part II." The Journal of Management Studies, Vol 12, No. 1 (1975), pp. 12-27.
6. Cohen, J. & Cohen, P. Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences. Hillsdale: N.J.: Lawrence Erlbaum Associates (1983).
7. Contractor, F. J. "Technology Licensing Practice in US Companies: Corporate and Public Policy Implications." Columbia Journal of World Business, Vol. 15, No. 3 (1983), pp. 80-88.
8. Contractor, F. J. "Choosing Between Direct Investment and Licensing: Theoretical Considerations and Empirical Test." Journal of International Business Studies, Vol. 15 (1984), pp. 167-188.
9. Cooper, G. & Kleinschmidt, E. J. "The Impact of Export Strategy on Export Sales Performance." Journal of International Business Studies, Vol. 16, No. 1 (1985), pp. 37-55.
10. Czinkota, M. R. & W. J. Johnston. "Exporting: Does Sales Volume Make a Difference?" Journal of International Business Studies, Vol. 14, No. 1, (1983) pp. 147-153.
11. Delacroix, J. "Export Strategies for Small American Firms." California Management Review, Vol. 26, No. 3 (1984), pp. 138-153.
12. DeNoble, A. F., Castaldi, R. M. & Moliver, D. M. "Export Intermediaries: Small Business Perceptions of Services and Performance." Journal of Small Business Management, Vol. 27, No. 2 (1989), pp. 33-41.
13. Digman, L. A. Strategic Management. Plano, Texas: Business Publications Inc. (1986).

14. Edmunds, S. E. & Khoury, S. J. "Exports: A Necessary Ingredient in the Growth of Small Business Firms." Journal of Small Business Management, Vol. 24, No. 4 (1986), pp. 54-65.
15. Hirsch, S. & Bijaoui, I. "R&D Intensity and Export Performance: A Micro View." Weltwirtschaftliches Archiv, Vol. 121, (1985), pp. 238-251.
16. Hofer, C. W. "ROVA: A New Measure For Assessing Organizational Performance." Advances in Strategic Management, In R. Lamb, ed. New York: JAI Press. Vol. 2, (1983), pp. 43-55.
17. Kathawala, Y. J., Monipalli, M. & M. Wienrich. "Exporting Practices and Problems of Illinois Firms." Journal of Small Business Management, Vol. 27, No. 1 (1989), pp. 53-59.
18. Kirpalani, V. H., and Macintosh, N. B. "International Marketing Effectiveness of Technology Oriented Small Firms." Journal of International Business Studies, Vol. 11, No. 3 (1980), pp. 81-90.
19. Miller, J. C. and Pras, B. "The Effects of Multinational and Export Diversification on the Profit Stability of U. S. Corporations." Southern Economic Journal, Vol 46, (1980), pp. 792-805.
20. Namiki, N. "Export Strategy for Small Business." Journal of Small Business Management, Vol. 26, No. 2 (1988), pp. 32-37.
21. Rapp, W. V. "Strategy Formulation and International Competition." Columbia Journal of World Business, Vol. 23 (1983), pp. 98-112.
22. Sarathy, R. & J. Edmunds. "The International Marketing Strategies of New England High-Technology Firms." Journal of the Academy of Marketing Science, Vol. 11, No. 3 (1983), pp. 226-239.
23. Terpstra, V. "Critical Mass and International Marketing Strategy." Journal of the Academy of Marketing Science, Vol. 11, No. 3 (1983), pp. 269-282.

#### Appendix A Statistical Procedure

The data was analyzed using hierarchical multiple regression analysis. The following form of the equation was used:

$$\hat{Y} = a + b_1X_1 + b_2X_2 + b_3X_3$$

Where:

- $\hat{Y}$  = dependent variable performance
- a = intercept
- b = partial regression coefficient
- X1 = size of firm
- X2 = international strategy (dummy coded)
- X3 = interaction size x international strategy

Statistical procedures included a regression of the current research year's size and strategy against the same year's performance. Since the effect of a strategy may require the passage of a period of time to take effect, one year and two year lagged equations were run.

One of the assumptions made in the use of multiple regression correlation is that the underlying relationship is linear. This is particularly of interest in this study since the relationship between financial performance and strategy may vary at differing levels of size. To test whether a curvilinear relationship is a more appropriate description of the true state between variables, a regression was run for each year using power polynomials. These variables are created by multiplying and existing research variable by itself and entering the computed variable into the regression equation as an additional independent variable [6, p. 226].