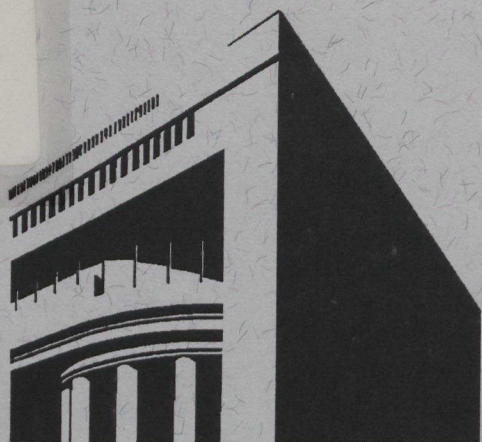


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Canadian Studies Grant Programs

An Analysis of Export Market Development by
Small and Medium Manufacturing Firms from
the Niagara Region of Canada

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Washington, D.C.

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MANUFACTURING FIRMS FROM THE NIAGARA REGION OF CANADA

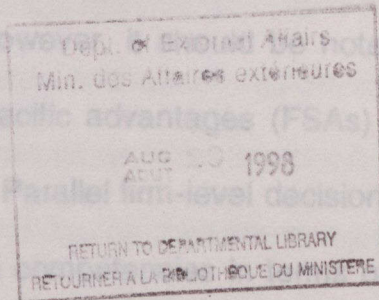
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AN ANALYSIS OF EXPORT MARKET DEVELOPMENT BY SMALL AND MEDIUM MANUFACTURING FIRMS FROM THE NIAGARA REGION OF CANADA

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1. Introduction

Rugman and Verbeke (1990) notes that "for businesses located in small open economies, like Canada, which do not form a part of the triad, it is of paramount importance to secure access to the market of at least one of the triad powers. This is essential for the long-term survival, profitability and growth of the corporation and thus for the nation (pp. 1-2)". In terms of trade, the United States is the best triad partner for Canada and during the last decade the trade liberalization agreements (FTA and subsequently NAFTA) have been undertaken to further optimize upon the close trade relationship between the two neighboring nations. However, it should be noted that current policies are geared towards improving firm-specific advantages (FSAs) in the global market and not in sheltering or protecting firms. Parallel firm-level decisions also focus upon efficiency-based strategies to improve core competencies in terms of cost, differentiation, or focus (Porter 1990; Rugman and Verbeke 1990). In addition, they may realize that their competitive advantage may be enhanced through government regulation and intervention: "Firms may also be involved in bargaining with government, or in exercising corporate social responsibility to merge private sector economic objectives into public sector social and political values" (Rugman and Verbeke 1990, p. 11). In Canada,

most large multinationals rely upon efficiency-based strategies to enhance firm-specific advantages such as Northern Telecom, Alcan, and Noranda and interact with the government to improve the institutional environment necessary to facilitate trade. However, some large multinationals such as Labatt and other food-processing firms have opted for government sheltering during trade liberalization between the Canada and the United States.

As noted above, most studies focus upon large multinationals and their strategies related to export market development and direct investment in the United States or in other parts of the global market. Canadian small and medium sized firms (SMFs) are not the main thrust of most investigation because of their limited involvement in export markets. If Canadian SMFs are at all a topic in trade-related analyses, most often the target group is selected from large metropolitan areas. Large metropolitan areas offer these SMFs certain location-specific advantages such as proximity to technical and producer services directly or indirectly associated with improving FSAs in the global market. This paper investigates the recent experience of Canadian SMFs from the Niagara region in Ontario in export market development in the United States. This region is selected because manufacturing decline has been paralyzing the local economy and the new sets of cross-border initiatives may have the potential to arrest or even reverse this downward trend. This region is in southern Ontario--the principal towns and small places include Fort Erie, Grimsby, Lincoln, Niagara Falls, Niagara-on-the-Lake, Pelham, Port Colborne, St. Catharines, Thorold, Wainfleet, Welland, and West Lincoln (Figure 1). As shown in Table 1, there are approximately 816 manufacturing establishments in this region employing over 38,000 persons in full- and part-time positions. The objectives of

this study are to understand how SMFs with high export orientation differ from SMFs with low export orientation in the following aspects: market performance, barriers to export market development, competitive problems, and competitive strategies. This study also evaluates how the FTA and NAFTA environment affect the performance and competitiveness of SMFs in peripheral regions of southern Ontario.

2. Background: Export Market Development

Export Orientation and Barriers: What motivates a firm to export? Figure 1 shows that different factors may influence a firm to become an exporter. These factors can be broadly categorized as "stimuli initiated from influences **internal** to the firm or due to stimuli originating from the firm's **external** environment (home market or export markets)" (Albaum et al. 1989, p.35). These factors can be further classified based on the export behavior: a firm may become an exporter under internal or external pressures (reactive behavior); contrarily, a firm may recognize opportunities in exporting and actively pursue export market development (proactive behavior). Firm-level factors identified with the proactive stance are economies of scale, growth and profit goals, unique product/technology competence, managerial urge, marketing advantages. External factors for proactive firms are recognizing foreign market opportunities and the role of change agents (eg. government agencies, chambers of commerce, banks, industrial trade associations, and other promoters of export activities). Similarly, internal factors for reactive firms are risk diversification, sales of a seasonal product, and excess capacity of resources, while external factors include unsolicited orders, limited, stagnant, or declining home market. In this study, a question on export orientation is the basis for

differentiating SMFs in the sample into firms with high export orientation and firms with low export orientation.

To a firm contemplating exporting or even a successful exporter, the lack or a sudden alteration of the motivating variables shown in Figure 1 may become barriers to export market development. These barriers are internal or external to the firm and in this paper, it is argued that the barriers will differ between firms with high export orientation (assumed to be proactive firms) and firms with low export orientation (assumed to be reactive). Also, internal barriers such as the lack of scale economies or the lack of in-house expertise have to be overcome first to consider export market development. Some of the barriers considered in this study relate to the size of the firm, limited scope of product development for export markets, inadequate management, supply and demand related issues, and competitive problems. SMFs may lack economies of scale such as financial resources for exporting. Scope economies such as the lack of in-house expertise are an obstacle. Management related factors are the lack of risk willingness, lack of management time, poor labor-management relations, and ineffective coordination of the value-added chain. Strong domestic competition, the lack of demand for the firm's products, and competition from foreign producers at the destination are major hindrances on their own but become highly restrictive for SMFs interested in exporting if supplier relationships are not strong. For example, the shortage of production materials, rising cost of production inputs, outdated plant and equipment, lack of operating capital, and labor recruitment difficulties are often problems faced by SMFs especially located in small places. In sum, internal barriers are firm-specific (scale, scope, technology) and external barriers pertain to the business environment such as government regulations, trade

barriers, the nature of competition, supply and demand conditions, as well as cultural and physical proximity between the trading nations.

Export Orientation and Competitive Strategies: Key elements of export market development involve market selection, export market entry strategies, choice of export entry modes, product policy, pricing, financing, marketing, and distribution. Production processes, firm-level decisions regarding collaborations/joint ventures/alliances, regulations, and bilateral trade agreements among others affect these key elements of export market development. Most researchers note that success in exporting is determined by the choice of markets and products (Cooper and Kleinschmidt 1985, Kotabe 1990, Porter 1990, Seringhaus 1991). The next sections will briefly discuss marketing and product options, and the growing importance of collaboration in export market development. The thrust of this paper is to examine how firms with low and high export orientation may differ in terms of product development, process change, competitive problems and strategies, and performance.

The general focus of the literature on export market development is large firms. Ideas developed in the literature with large firms in mind and hypotheses tested using such sample are used in this study to examine how small and medium manufacturers from small towns (in the Niagara Region) in a small open economy (Canada) pursue export market development especially across the border in the United States.

In export market development, two broad marketing strategies are market concentration (a smaller set of structurally similar markets) versus market spreading (a wide range of countries with contrasting demand conditions). Product policy involves product planning and development, as well as product strategy. The former includes

decision making regarding new product development or significant redesigning to fit foreign demand. The latter includes decisions regarding product standardization versus adaptation. Such decisions are influenced by firm-level characteristics (eg. type of products, production methods), as well as market characteristics (eg. some markets and some products may require local adaptation of a particular concept). However, not all firms are flexible enough to tailor products for target markets, but some firms often develop products specifically for foreign markets (Dicht et al. 1990, Christensen 1991, Kleinschmidt and Cooper 1990) bypassing the first few stages of the product life cycle (Vernon 1966, 1979). The first few stages of Vernon's model of export market development as well as the literature on competitive advantage state that the level of demand at home is the launching pad (Porter 1990). If there is a lack of demand at home, then products will never mature to reach the internationalization stage. Literature on the success of multinationals from small open economies showed that the stages in product cycle are often skipped (Agmon and Kindleberger 1977).

The ideal marketing situation is to have a "glocal" product--a global concept with local adaptation. This is in line with global marketing or "incremental innovation" concepts of having a standardized product which with some variations will satisfy all possible market segments (Kotabe 1990, Rothwell and Whitson 1992). Scale economies or price-based competition is one of the underlying assumption of exports in standardized products. Local adaptation of products require flexible production methods, therefore, competitive advantage is often based on nonprice based factors such as customer responsiveness (Hilpert 1991). Quality, durability, reliability are other product characteristics common to both price and nonprice based product strategies.

Two other factors known to affect export performance are collaboration (eg. entry strategy) and the use of external technical support. Collaboration in the form of joint ventures, co-licensing agreements, alliances allow firms to attain higher levels of scale economies, access technologies, share information on products and markets--collaborations are often a formidable force against competitors. For similar reasons, a firm may utilize external services such as private consultants and government agencies. The volume, intensity, and diversity of external technical support positively affects export performance (Bryson et al. 1993, Denis and Depleteau 1985, MacPherson 1995, Seringhaus 1991, Sinkula 1990, Smallbone 1993).

Export Orientation, FTA, and NAFTA: Trade agreements are expected to facilitate export market development. Again, the thrust of the literature is quite biased toward large or multi-plant establishments. This study is designed to evaluate the impact of FTA and NAFTA on the competitiveness and performance of SMFs in the Niagara Region. Competitiveness is defined to include scale economies, productivity, employment level, capital investment, and R&D spending. Two types of performance measure are used: profitability and exports to the U.S. and Mexico (NAFTA only). It is argued that SMFs with low versus high export orientation will experience different levels of impact under the FTA and NAFTA environment.

3. Research Methodology and Results

A sample of 250 SMFs was selected from a list of approximately 800 manufacturing firms in the Niagara Region using the random sampling method. The first round of mail survey yielded a 10 percent response. The actual response rate was higher

because approximately 80 firms had to be deleted from the sample--these deleted firms were either out of business or were improperly listed as a manufacturer or returned the survey declining to participate. A second survey was sent to 170 firms after these firms were contacted over the phone (including firms who responded in the 1st round). This round increased the number of usable questionnaires to 54. The sample is representative of the industry structure of the Niagara Region (Table 1).

General Profile - Approximately, 50 percent of the firms have been in Ontario for more than 20 years. Most firms are Canadian owned and are single plant establishments with sales less than \$5 million (Canadian). For only 30 percent, total sales exceeded \$5 million in 1995. However, 63 percent reported that they successfully export to the United States and 13.5 percent export sporadically to the United States. Only three firms indicated as having no interest in exporting to the United States. On an average 30 percent of the total sales came from exports with one firm obtaining 100 percent of its sales from exports. Over one-third of the total respondents noted that both sales and export sales growth exceeded 15 percent between 1990-1995. Research and development expenditures remained low on an average at 5.2 percent of total sales and 90 percent of the firms spent less than 10 percent on R&D. The growth in R&D expenditure remained below 1 percent for the majority of the respondents with only 11 percent reporting a growth over 15 percent. The main clients are in manufacturing--approximately, 70 percent of the firms sell to other manufacturers with second most important sectoral market being retailing followed by institutional markets (eg. hospitals, universities), transportation, utilities, and government.

Results

The main categorization of SMFs is based on their export orientation. Firms with high export orientation consider themselves successful exporters. The second group (firms with low export orientation) includes firms which are not successful at exporting to the United States or export sporadically. The rest of the report is organized into the following sections: general relationships; analyses of export orientation and performance; barriers to exporting; competitive problems faced by SMFs in the Niagara Region; export orientation and competitive strategies; and the impact of FTA and NAFTA.

General relationships: (i) Size and Age - Table 2 shows that 100 percent of SMFs with low orientation toward exporting have sales below \$5 million (Canadian) in 1995. The distribution of successful exporters is more or less even across the two sales categories. Several studies in the past have linked industrial export performance and size (Cavusgil 1984, Denis and Depleteau 1985, Samiee and Walters 1990). Here, we can see a clearcut relationship between size and exporting even within SMFs--all firms with low export orientation are relatively smaller in size as measured using sales volume. However, the relationship between size and exporting is less clearcut for the firms with high export orientation--it seems that other factors beyond their relative size influence SMFs to become exporters.

Table 2 shows that over one-half of firms with high export orientation have been in existence for more than 20 years, whereas a little over one-third of the second group falls into this category. The relationship between R&D effort and export orientation shows that a larger percentage of firms within the group with high export orientation incur relatively high R&D expenditures. Majority of the firms with low export orientation expend

less than one percent of their sales on R&D. In general, the Niagara Region firms are not classified as high-tech (see definition of high-tech based on R&D expenses in Malecki 1991), however, it will be shown that both product and process development/improvement directly affect export performance.

(ii) Products and Processes - First, firms were asked if they introduced new or significantly redesigned products in the last five years. Next, these firms were asked to estimate the direct effect of such product development on sales and exports. Two-thirds from the category with high export orientation introduced new or significantly redesigned products in the last five years compared with only a very small percentage of firms with low export orientation.

Among all firms with redesigned or new products and high export orientation, 65 percent introduced between 1-4 products; 25 percent developed between 5-10 products; and 10 percent introduced more than ten products (chi-square value is 16.01, $p=.00006$ two-tailed probability test). Within this group, a direct relationship is noted between product development (new/redesigned) and performance: (a) product development and sales - almost one-half of all firms in this category derived 10-25 percent of their total sales from new/redesigned products; and another 43 percent derived over 25 percent of their sales from these new/redesigned products; and (b) product development and export revenue - approximately, one-fourth of firms in this group earned 10-25 percent of their export revenue from new/redesigned products; and another 48 percent earned over 25 percent of their revenue from new/redesigned products.

The cross-tabulation of process improvement and export orientation (Table 2) shows that over 75 percent of the firms in the high export orientation category somehow

improved their manufacturing methods during the last five years. Within the group with low export orientation, more firms (55.6%) noted the lack of any improvement in manufacturing methods (chi-square value is 5.0, $p=.02$ two-tailed probability test). In assessing whether or not the process change undertaken during the last five years significantly increased earnings from export sales, over 60 percent of the firms introducing new processes answered 'yes'.

Firms were also asked to indicate if process change involved using new industrial machinery, computer-aided design, computer-aided engineering, automated materials handling, just-in-time inventory control, or new office technology during the last five years.

The most important categories of process change are new industrial machinery and new office technology--the first has a direct impact on production; and investments in office technology improves availability, accessibility, and processing of information pertaining to business in general and trade. A little over 40 percent of the firms undergoing process change indicated the use of computer-aided design, however, only 18 percent were utilizing computer-aided engineering methods. Automation in material handling was introduced by one-fifth of all firms undergoing process change. Approximately, one-third actively pursued just-in-time inventory control during the time of the survey in 1996.

This suggests that both product and process development clearly distinguish firms with high export orientation from firms with low export orientation. Cross-tabulations (as shown in Table 2) showing percentage distribution of firms across categories seem to indicate that product development may have a higher influence on export performance than process development, however, such detailed analysis is beyond the scope of this section.

(iii) Collaboration - The interrelationship between collaboration and export orientation is not statistically significant for the SMFs in the study sample. Approximately, one-third of all firms with high export orientation collaborated, whereas less than one-sixth of all firms with low export orientation collaborated to improve export performance. Team projects and joint ventures are much more common modes of collaboration compared with co-licensing agreements. Licensing agreements may pose a threat to SMFs in the Niagara Region trying to protect their already limited target markets or licensing agreements may not be a preferred mode of entry to the U.S. market.

Export Orientation and Performance: Table 3 shows an analysis of the interrelationship between export orientation and different measures of performance. Five measures are used: growth in total sales between 1991 and 1996; export intensity, that is, the percentage of total sales derived from exports; growth in export revenue; growth in value-added; and growth in R&D expenditure. All performance categories are subdivided into high and low (see footnotes for Table 3 for the criteria for such categorization). Chi-square values are significant for all except R&D growth (the probabilities shown are based on two-tailed probability test). The results show that there is a direct association between export orientation and growth in sales; export orientation and export intensity; and export orientation and growth in export revenue. SMFs who classify themselves as successful exporters to the United States have over 20 percent of their sales from exports; furthermore, over two-thirds of these firms experience high levels of growth in export revenue. The association between growth in value-added and export orientation further confirms the link between product and process development and exporting.

Export Orientation and Barriers: Barriers to exporting are broadly categorized into internal barriers (eg. firm-specific) and external barriers (eg. trade barriers). In this study, these barriers are categorized as follows:

Internal

- size of firm (S)
- financial requirements (S)
- lack of operating capital (S)
- lack of in-house expertise (Sc)
- risk willingness (M)
- ineffective management (M)
- management time requirements (M)
- poor labor-management relations (M)
- out-dated plant and equipment (T)

External

- cultural differences (I)
- licensing requirements (I)
- right of establishment (I)
- immigration issues (I)
- govt controls/regulations (I)
- rising cost of production inputs (S)
- employee recruitment problems (S)
- shortage of production inputs (S)
- declining demand for product (D)
- strong domestic competition (C)
- strong competition from foreign producers (C)

Internal barriers relate to scale (S), scope (Sc), management/organizational problems (M), and technology (T). External barriers include the characteristics of the export market (I), supply- and demand-side problems in the Niagara Region (S and D), as well as competitors (C). Most studies show that for SMFs internal barriers inhibit them for further pursuing export strategies. Most often size is cited as the major hindrance to the expansion of geographic markets by these SMFs. The survey measured the response of each firm to a question on the severity of these barriers (1=no barrier and 5=major barrier). The occurrence of high mean values for firms with low export orientation is quite systematic across all types of barriers. Table 4 shows that the difference in mean values is statistically significant for a select group of barriers. Most are internal barriers except one. In this study, the external barrier (strong competition from foreign producers, that is, producers across the border in the United States) received the highest mean value for both export categories. The internal barriers pertain to scale, scope, and management.

All three scale related barriers are next in rank for firms with low export orientation. For the successfully exporting firms, the next level of barriers are a mix of scale and management issues. Furthermore, one of the significant "management" barrier, management time requirement, is a direct function of scale. Successful SMFs continue to view exporting as risky and a time consuming venture although close to 40 percent experienced growth rates of over 15 percent in export revenue in the 1990s

Export Orientation and Competitive Problems: Competitive advantage and competitive problems are regarded as both sides of the same coin. Firms with high export orientation are expected to be competitively positioned and have lower mean values (measured on a 1-5 Likert scale where 1=not a problem and 5-severe problem). Table 5 shows the results--the mean values are greater for firms with low export orientation except for the following categories: foreign imports, government regulations (in Canada), and foreign trade barriers. Foreign imports may shrink the domestic demand for products manufactured by Canadian SMFs and export market development becomes a part of the strategic plan for these SMFs. The firms with high export orientation are exposed to regulations on a day-to-day basis, therefore, the existing regulations and barriers are often considered a hindrance because of the management time required to comply with all regulations. Most SMFs do not have in-house export management departments, therefore, regulations even within the free trade atmosphere will reduce the competitive advantage of SMFs vis-a-vis large Canadian manufacturers or U.S. producers with a strong foothold in their own home market.

The difference in mean values is significant for 'access to capital' and 'government regulations'. The lack of access to capital reduces the competitive advantage of SMFs

vis-a-vis large firms. In this study, it further reduces the competitive advantage of SMFs with low export orientation vis-a-vis SMFs with high export orientation. It was noted in Table 2 that firms with high export orientation are slightly larger in size compared to firms with low export orientation. As mentioned in the previous paragraph, SMFs with high export orientation are relatively more prone to consider 'government regulations' as a problem--the difference between the two groups is significant which implies that policymakers may need to further streamline their efforts in order to involve SMFs in the export-led development of Canada.

Export Orientation and Competitive Strategies: The questions focused upon four types of strategies pursued by SMFs in order to sustain and improve their competitive advantage vis-a-vis other producers. These are product based, process based, pricing, and marketing strategies. Table 6 shows the mean values of the response of firms in the sample (a 1-5 Likert scale is used, 1=not important and 5=critically important). The mean values for firms with high export orientation are consistently higher compared to the mean values of firms with low export orientation with one exception. Finding new home markets in Canada shows a mean value of 3.52 (close to being considered very important) for firms with low export orientation whereas the mean value is 3.09 (moderate importance) for firms with high export orientation. It can be argued that the competitive strategies of firms with high export orientation will keep in mind the needs of the target export market-- MacPherson (1995) showed that SMFs across the border in New York state tailored their product development with foreign clients in mind more so than the SMFs focusing upon their home markets. Furthermore, these SMFs showed a preference for internationally standardized outputs, as well as relatively long production runs. The SMFs with high

export orientation noted that their product and process development in the last five years positively affected export performance (Table 1).

Table 6 shows that the strategies that significantly differentiate between SMFs with high and low export orientation are as follows: (i) product development - develop new product on a continual basis and expand R&D efforts as opposed to constantly improving existing products and broadening product line significantly; (ii) process development - constantly improve existing manufacturing methods as opposed to introduce new technologies on a continual basis; (iii) competitive strategies - price-based as well as non-price based; and (iv) marketing - strive to become a leader within the market segment as opposed to finding new markets or seeking government protection. A discussion of Table 1 showed that most SMFs with high export orientation introduced new or redesigned products in the last five years and almost one-half of these firms received 25 percent of their export revenue from these new/redesigned products. This matches MacPherson's (1995) finding for SMFs in New York that SMFs with high international orientation are quite proactive in targeting product development with foreign demand in mind. The Canadian SMFs with high export orientation also realize that R&D efforts are important especially if they are trying to compete on the basis on non-price based factors such as customer responsiveness, product performance, reliability, and durability. In fact, results show that these SMFs are continually striving to improve their existing manufacturing methods and compete on the basis of both price and non-price based strategies. The discussion of process development (Table 1) showed that most SMFs with high export orientation did replace old machinery with new machinery and focused upon improving efficiency (ie. cut costs) through selective use of automated materials handling, just-in-

time inventory control, computer aided design, and the use of new office technology. Further evidence of how value-added growth and export orientation is related has been shown in Table 3--firms with high export orientation have higher growth rates for value-added.

It is often hard for SMFs to compete on the basis of price-based strategies vis-a-vis large firms with significantly larger scale economies. Canadian SMFs in the Niagara Region are at a disadvantage not only vis-a-vis large firms but also other Canadian SMFs from large metropolitan areas such as Toronto with a better access to external inputs to production and export market development. Again, MacPherson (1995) showed that SMFs across the border (New York state) from the New York metropolitan region had better access to external services pertaining to production and export market development compared to SMFs in the Western New York region (eg. Buffalo). As a result, SMFs from the New York area performed better in exporting than the Buffalo SMFs. Similar differentiation are also expected between SMFs from the Toronto metro area and SMFs in peripheral southern Ontario. Therefore, pure price-based strategies are not enough and results show that these SMFs in southern Ontario periphery are also utilizing non-price based strategies such as quality control (performance, durability and reliability of the product) to improve their export intensity and growth in export revenues.

Marketing, promotion, and delivery are major aspects of the value-added chain. The survey included some general questions on marketing. The SMFs with high export orientation do strive to become leaders within their own market segment. Response to this question received the highest mean score (4.15 or very important) in the survey of competitive strategies pertaining to technical goals. The next highest score in marketing

was recorded for export market development ('find new markets elsewhere').

Export Orientation, FTA, and NAFTA: Table 7 shows the mean values of the impact of the FTA and NAFTA on SMFs in the Niagara Region based on a 1-5 Likert scale (1=strong positive impact, 3=zero impact, 5=strong negative impact). Most mean values of the impact of the FTA are less than but very close to 3. The exceptions are the impact (slightly negative) of U.S. import competition on Canadian SMFs (both for firms with high and low export orientation) and the domestic market share of SMFs (for firms with high export orientation). The impact of NAFTA shows mean values greater than 3 (moving toward a negative impact) for both U.S. and Mexican import competition, as well as domestic market share (only for SMFS with high export orientation) and overall competitiveness (only for SMFs with low export orientation).

The mean values are significantly different for productivity and exports to the U.S. market between the two groups of SMFs only under the NAFTA environment. The mean values for the above two categories are 3.0 and 2.94, respectively, for firms with low export orientation whereas the values are slightly lower than 3 (productivity=2.70 and exports to the U.S. market=2.27) for firms with high export orientation. The competition from foreign imports and foreign producers does have some influence in increasing Canadian exports to the U.S. market by SMFs in the Niagara region. It should be noted that the NAFTA environment may not have the potential to directly influence firm-level strategies, rather the changes noticed within SMFs in the last five years are probably a response to changes worldwide and not just to the trade policies among North American nations. Large firms especially multi-plant establishments would differ in their response but such speculative analysis is beyond the scope of this study.

4. Conclusions

The survey results show that SMFs from the Niagara Region are exporting to the United States and the U.S. is the major destination of their exports. Firms with relatively high export orientation perform better in terms of sales, growth in export revenue, export intensity, and value added compared with firms with relatively low export orientation. Most firms have low R&D expenditures; nevertheless, there is a conscious effort in the part of the SMFs to introduce significantly new or redesigned products, as well as new production technologies. There is a distinct correlation between product and process improvement and export performance.

The barriers to exporting are both external and internal. There is a significant difference between SMFs with high and low export orientation as to how they evaluate these barriers to export market development. The only external barrier differentiating between firms with high and low orientation to exporting is competition from U.S. producers. The significant internal barriers pertain to the lack of scale economies, in-house expertise, operating capital, finances, and management time. Several competitive strategies are pursued by these SMFs to overcome bottlenecks in exporting. Firms with a high export orientation place more emphasis on developing new products on a continual basis and improving existing manufacturing methods while competing using both price-based and non-price based strategies such as customer responsiveness. These firms are also quite ambitious and they strive to be leaders within their market segment.

The impact of FTA and NAFTA is not being experienced by the SMFs in the Niagara Region. SMFs with low export orientation mostly noted 'zero' impact of FTA and NAFTA on competitiveness and performance measures. Firms with high export

orientation significantly differed from firms with low export orientation in their assessment of the impact of NAFTA on two issues: productivity and exports to the U.S. market. Firms with high export orientation noted that NAFTA had a positive impact on productivity and exports to the U.S. Some negative impacts were noted by the firms with high export orientation such as U.S. and Mexican import competition, as well as the decline in domestic market share.

TABLE 3. International Orientation and Performance

TABLE 1. Sectoral Distribution of Manufacturing Firms in Niagara Region

<u>Manufacturing Industry of firms</u>	<u>Number of firms</u>	<u>Total Employment</u>	<u>Average Employment</u>
Transportation equipment	41	11,717	286
Fabricated Metal	186	5,547	30
Food	81	3,595	44
Primary Metal	20	3,096	155
Paper & Allied	9	2,203	245
Printing, Publishing & Allied	89	1,859	21
Machinery	50	1,591	32
Non-metallic mineral	56	1,433	26
Electrical & Electronic	23	1,383	60
Other manufacturing	79	1,222	15
Beverage	23	1,049	46
Chemicals	31	1,011	33
Rubber	8	862	108
Wood	50	770	15
Textiles	15	522	35
Refined petroleum	5	279	56
Plastics	12	237	20
Leather & Allied	8	197	25
Furniture & Fixture	23	192	8
Clothing	7	178	25
TOTAL	816	38,943	48

Source: Niagara Canada Business Directory, 1993/94

TABLE 2. General characteristics of firms with high versus low export orientation in the sample

Type	N*	(1) Size (sales volume - %)		(2) Age of Establishment		(3) R&D Effort (%)		(4) Product Development (%)		(5) Process Development (%)		(6) Collaborative Effort (%)		
		0-5 million	>5 million	0-10	11-20	>20 yrs	Low	High	Yes	No	Yes	No	Yes	No
High	33	51.5	48.5	15.2	30.3	54.5	46.7	53.3	65.6	34.4	75.8	24.2	34.4	65.6
Low	19	100.0	-	42.2	21.1	36.7	61.1	38.9	5.9	94.1	44.4	55.6	15.8	84.2

* all survey respondents

(1) N = 51; High = 33, Low = 18.

(2) N = 52; High = 33, Low = 19.

(3) N = 48; High = 30, Low = 18.

(4) Question asked: Over the last five years, did you introduce any new or significantly redesigned products?

(5) Question asked: Over the last five years, did you introduce any new or significantly improved manufacturing methods?

(6) Collaboration = joint venture, co-licensing agreements, team projects, or other associations that differ from a purchase of services.

TABLE 3. International Orientation and Performance

		International Orientation [%]*		Chi-square	p
		High	Low		
Sales Growth ^a n = 42	High	87.1 [71.1]	64.7 [28.9]	3.34	.06
	Low	12.9 [40.0]	35.3 [60.0]		
Export Intensity ^b n = 52	High	66.7 [91.7]	10.5 [8.3]	15.29	.00009
	Low	33.3 [39.3]	89.5 [60.7]		
Export Growth ^a n = 41	High	76.7 [88.5]	27.3 [11.5]	8.46	.003
	Low	23.3 [46.7]	72.7 [53.3]		
Value added ^a n = 40	High	44.4 [85.7]	15.4 [14.3]	3.26	.07
	Low	55.6 [57.7]	84.6 [42.3]		
R&D ^a n = 42	High	54.8 [73.9]	54.5 [26.1]	ns	ns
	Low	45.2 [73.7]	45.5 [26.3]		

* Each cell shows % row; % column shown in brackets.

^a High = >5%, Low = ≤5%.

^b High = >20% of total sales, Low = ≤20% of total sales.

ns = not statistically significant

TABLE 4. International Orientation and Barriers to the Development of Export Markets

Barriers	Orientation*		Statistics	
	Low	High	t-value	p
Size of firm	2.92	1.27	5.46	.000
Lack of operating capital	2.61	1.87	1.96	.05
Financial requirements	2.92	1.57	4.07	.000
Lack of in-house expertise	2.23	1.56	2.05	.04
Management time requirements	2.35	1.72	1.74	.08
Risk willingness	2.38	1.78	1.77	.08
Strong competition from foreign producers	3.18	2.25	1.84	.07

* Mean values on a 1 - 5 Likert scale.

TABLE 5. International orientation and competitive problems

<u>Competitive Problems</u>	<u>Orientation (mean values*)</u>	
	<u>Low</u>	<u>High</u>
Canadian competitors	2.61	2.06
Foreign imports	1.76	2.30
Access to high quality labor	2.64	2.46
Access to capital ^a	2.77	1.81
Access to business/producer services	1.40	1.35
Fiscal- municipal	3.0	2.93
- provincial	3.05	3.0
- federal	3.16	3.15
Government regulations (in Canada) ^a	1.56	2.25
Foreign trade barriers	1.75	1.87

* mean values on a 1-5 Likert scale.

^a Statistically significant - two-tailed probability test.

TABLE 6. International orientation and competitive strategies

Strategies	Orientation	
	Low	High
Product		
Develop new products on a continual basis*	2.58	3.34
Constantly improve existing products	3.35	3.93
Broaden product line significantly	2.76	3.21
Expand R&D efforts*	2.00	2.71
Process		
Introduce new technologies on a continual basis	2.94	3.37
Constantly improve existing manufacturing methods*	3.29	3.87
Competitive		
Price-based*	2.05	2.81
Non-price based*	2.55	3.61
Marketing		
Find new home markets in Canada	3.52	3.09
Find new markets elsewhere	2.76	3.36
Enter new markets before competitors move in	3.11	3.31
Fight import competition by exporting more	2.11	2.59
Seek protection against foreign imports	2.00	2.68
Try to become leaders within the market segment*	3.29	4.15

* Statistically significant - two-tailed probability test.

TABLE 7. The impact* of FTA and NAFTA

<u>Categories</u>	<u>FTA Orientation</u>		<u>NAFTA Statistics</u>	
	<u>Low</u>	<u>High</u>	<u>Low</u>	<u>High</u>
Scale economies	3.00	2.75	3.11	2.90
Productivity ^a	2.82	2.60	3.00 ^a	2.70 ^a
Capital investment	2.94	2.84	3.00	2.90
R&D spending	2.85	2.96	3.00	3.00
Profit performance	2.76	2.71	3.00	2.65
Employment	2.94	2.96	3.00	2.93
Domestic market share	2.94	3.15	2.94	3.12
U.S. import competition	3.16	3.36	3.22	3.25
Mexican import competition	-	-	3.05	3.19
Exports to the U.S. market ^b	2.64	2.31	2.94 ^b	2.27 ^b
Exports to Mexico	-	-	3.00	2.93
Overall competitiveness	2.82	2.50	3.05	2.62

* mean values of impact based on a 1-5 Likert scale.

^a t-value is 1.70 and the mean difference is statistically significant (p=.09; two-tailed probability test).

^b t-value is 2.76 and the mean difference is statistically significant (p=.008; two-tailed probability test).

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Figure 1. A classification of export motives

	INTERNAL	EXTERNAL
PROACTIVE	managerial urge	foreign market opportunities
	growth and profit goals	change agents
	marketing advantages	
	economies of scale	
	unique product/technology	
REACTIVE	risk diversification	unsolicited orders
	extend sales of a seasonal product	small home market
	excess capacity of resources	stagnant or declining home market

Source: Albaum et al. 1989, p. 35

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