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DECISIONS ABOUT EXPORTING: THE CASE OF
MICHIGAN'S SMALLER AGRIBUSINESS
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**DECISIONS ABOUT EXPORTING: THE CASE OF MICHIGAN'S SMALLER
AGRIBUSINESS AND FOOD INDUSTRY FIRMS**

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By

James Arthur Sterns

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ABSTRACT

DECISIONS ABOUT EXPORTING: THE CASE OF MICHIGAN'S SMALLER AGRIBUSINESS AND FOOD INDUSTRY FIRMS

By

James Arthur Sterns

With American agri-food firms competing in a marketplace that is evolving, growing and becoming international in scope, this research seeks to identify and model driving forces that motivate and sustain the internationalization process *at the firm level*. Specifically, the research tests the supposition that the necessary and sufficient conditions for a smaller agri-food firm to decide to export are: (1) perceived demand, (2) perceived competitive advantages in the transformation process, (3) perceived competitive advantages in the management of transaction costs, and (4) a set of decision rules employed by decision makers that do not inhibit entry into international markets.

In addressing this issue, the research presents a review of relevant literature in the fields of Management, Marketing, Economics and Agricultural Economics. Building on this broad body of published work, a cyclic model of firm behavior is proposed and tested within the context of international marketing decisions of smaller (i.e., less than 150 full time employees and/or less than \$150 million annual gross sales), Michigan-based agri-food firms.

The proposed model asserts that three sets of stock variables (i.e., opportunity, choice and outcome sets) and three flow processes (i.e., decision making, transacting and learning) are fundamental to understanding decisions about exporting. These six components, made operational by using constructs of the proposed driving forces, were tested empirically through eight case studies and a mail survey of 242 firms, of which 112 returned completed questionnaires. Qualitative and quantitative analyses used to examine the data included a comparative analysis of cases, logistic regression modeling and factor analysis.

Principal findings of the empirical research support the theoretic assertions of the overall model. The prescriptive implication of the research for both firms and policy makers is that internationalization in general, and exporting in particular, is dependent upon effective demand that is perceived by the firm, an ability to competitively supply that demand, and a desire to do so. Lacking any of these, decisions and policies advocating the pursuit of international markets will be undermined by the firm's inability to initiate and/or sustain exporting efforts.

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This work is dedicated to Patricia Wade Aust, my fiancée, love, companion and partner in all things silly and grand.

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CHAPTER 1 INTRODUCTION

1.1 The Problem Statement

American agri-food firms are competing in a marketplace that is evolving, growing and becoming international in scope. In general, the popular agriculture-related press has enthusiastically supported these changes, as is evident in the following:

U.S. nurserymen are gradually increasing their participation in the global economy... and the export market itself is expanding as never before (Minton, p. 53).

...GATT and NAFTA trade agreements will shrink the world and heighten export opportunities abroad and on this continent. The long-range outlook is bright indeed for American beef, pork and lamb producers, but only if we continue to *sell, sell, sell* beyond our borders! (Fee, p. 27).

...any company that doesn't look to foreign markets for future growth is asking for trouble in a world that is quickly becoming globalized. To any small to mid-sized [food] company, I say: You are not safe in America (Messenger, p. 6).

The agriculture community hasn't been so euphoric about exports since 1974, when their value jumped from \$13 billion to \$21 billion in a single year. There is reason for excitement: We'll ship out a record \$60 billion worth of ag products in 1996 (Smith and Haag, p. 12).

Despite this enthusiasm in the "press," anecdotal evidence indicates that individual firms have responded in various ways to this changing environment. Some agri-food firms appear to be ignoring the advice of the popular pundits as they continue to focus

on marketing their products domestically. Other agri-food firms that are similar in size and product offerings are becoming highly involved in and committed to international markets. How can we explain this empirically observed range of firm behavior? *At the firm-level, what motivates and sustains the internationalization process? Are there identifiable driving forces that can explain why a firm would internationalize its scope of operations?*

Economic theory purports several, albeit partial, explanations for what has been observed. Theories of comparative advantage, transaction costs, and economies of scale are the most often cited as explanations of firms' international marketing decisions. But Ricardian concepts of comparative advantage fail to explain why quite similar products are both imported into and exported from the same country, or why two firms within the same country respond differently to apparent relative advantages in trade. And even if transaction costs explain why a given firm chooses not to export, very similar firms in terms of product and size have apparently overcome these same transaction costs since they are actively exporting. Similarly, economies of scale may provide some explanation for a firm's desire to expand markets, but issues of culturally-specific tastes and preferences may impede or totally prevent a firm from exporting a homogeneous product (i.e., a product capable of capturing economies of scale in production).

Various academic fields associated with the business school literature also suggest a range of explanations why firms choose to internationalize. For example, Abbott and Bredahl suggest that competitiveness and competitive advantages drive the

internationalization process. As they note, the search for a unified trade theory with empirical underpinnings led to a "marriage of trade theory with industrial organization (IO) theory." The resulting union focuses on country-, sector-, and industry-level competitiveness and purports that "in individual industries, institutions, infrastructure and technical characteristics matter (p. 17)." But these two authors go on to note that an implicit message of IO theory is that a general theory to explain firm competitiveness (and implicitly, firm behavior) may be unattainable because of these industry-specific factors. And even within a given industry, Abbott and Bredahl's conceptualization of competitiveness in international agri-food markets assumes that all firms within an industry respond similarly to international stimuli--in many cases, an empirically false assertion. Alternatively, management theory focuses primarily on the role of the decision maker and the strategies of the firm to explain inconsistencies across firms, while marketing theory focuses on the importance of information, learning, knowledge acquisition and long term relationships to explain the same inconsistencies.

This broad range of research literature suggests that the problem should be conceptualized as two sides of the same coin. On one side of the coin are market forces and on the other are conditions within the firm, suggesting that market forces and conditions specific to the firm act collectively and simultaneously to determine internationalization opportunities. But the literature only provides a list of correlates to internationalization decisions. The published findings are inconclusive in establishing definitive causal relationships that would explain the observed range of

firm behavior. Further, there is an implicit message in both the popular press' rallying cries, and in the research community's search for causal links: internationalization is an appropriate strategy for *all* firms.

Such a prescription may or may not have universal validity. Are managers who choose not to participate in international markets incompetent? Or are there basic economic and/or business factors that make international marketing inappropriate for some firms? What are the fundamental driving forces that lead firms to internationalize their business scope? And, do these forces act discriminately, favoring some firms over others? These questions suggest that there is a need for research *at the firm level* that will empirically test for underlying causal relationships and driving forces that explain the process by which firms enter (and exit) international markets.

At least three sets of beneficiaries are likely to gain from research on the internationalization of smaller agri-food firms: agri-food firms, policy makers, and the research community. For agri-food firms, research on the entry and exit decisions related to international markets could become the basis for more informed decisions at the firm level. Typically, decision makers at smaller firms face an overwhelming degree of uncertainty in regards to international markets. The research could reduce this uncertainty, permitting decision makers to be better informed of available opportunities. For policy makers, this research will clarify the overall appropriateness of prescriptions for greater involvement in international markets as *the* means for transforming Michigan's (and the U.S.'s) agri-food sector. Further, by

increasing the general understanding of what motivates and sustains international marketing efforts, policy makers could target policies and funding more effectively in their efforts to enhance the performance of the sector. For the research community, particularly Land-Grant Universities, this research will be one of the first attempts to model the internationalization process of *agri-food* firms, given that prior research has focused almost exclusively on industries unrelated to the agri-food sector. This study will also increase the research community's understanding of firm behavior, adding to the growing body of literature that attempts to bridge economic and management theories.

1.2 Background to the Problem Statement

1.2.1 A definition of "Internationalization"

"Internationalization," in and of itself, is a complex, multi-dimensional concept that includes such diverse activities as marketing products and/or services abroad (i.e., exporting), foreign sourcing of production inputs and/or investment capital, competing against imports in domestic markets, franchising in foreign markets, joint ventures with international partners, and foreign direct investments financed by domestically generated capital¹. This diverse range of activities apparently has confounded researchers since no consensus exists in the literature on an operative

¹Although this research recognizes a priori that dynamic interactions among these diverse activities are possible (e.g., a firm that sources inputs internationally may more likely be an exporter than a firm that sources inputs locally), the activities are considered distinct because each is a sufficient but not necessary condition for a firm to be international.

definition of "internationalization." As noted above, economic literature on the subject generally views internationalization in terms of trade driven by comparative advantages and factor endowments. Much of the management literature suggests that internationalization be defined as an evolutionary process that transforms and internationalizes the firm over time. Much of the marketing literature defines the concept pragmatically and in terms of how a firm actually conducts trade and commerce in an international context.

Drawing upon these various streams of thought, this dissertation proposes the following summary definition: *internationalization is a process by which a firm evolves as it defines and redefines in an iterative manner its scope of operations to include international dimensions.* This process is observable through the decision maker's evolving perceptions and actions, and the firm's evolving level of involvement in and commitment to international markets.

1.2.2 Why Firms Internationalize

This dissertation builds on the premise that firms and their decision makers have multiple objectives (e.g., profit maximization, cost minimization, status emulation, altruism, adventure, excitement) within a world of bounded rationality, opportunism and asset specificity. The decision to internationalize, as are all other decisions, is made within this context. Researchers have proposed, and in some cases empirically tested, several reasons for why a firm would initiate the internationalization process. In general, all of the proposed reasons suggest that firms internationalize to either enhance firm performance (however defined) or contribute to

firm survival. One specific set of reasons suggests that firms internationalize because they believe that to do so will be profitable (i.e., marginal revenue will be greater than marginal costs) and that the company's products/services are competitive in international markets (in terms of price and/or quality). Saturated home markets, using excess production capacity, or selling excess supply in "untapped" or "under-served" international markets are all additional, albeit similar, reasons that have been suggested. A third set of reasons suggest that internationalization is a means for the firm to grow and/or diversify.

Identifying firms' motivation to internationalize, i.e., the answer to the question why, is one of the central research objectives of this dissertation. But this objective is more than just to confirm or refute the reasons already suggested in the literature. The core research objective is to understand the process by which firms realize that internationalization is or is not an appropriate opportunity for them, and to understand why similar firms view internationalization differently in terms of its potential for contributing to firm performance and survival.

1.2.3 How Firms Internationalize

As Dichtl, *et. al.* note, "there are two facets [of the internationalization process] which require particular attention: (1) the overall decision to go international; and, (2) the decision to favour a certain strategy to internationalize (p. 49)." In their opinion, the former is the much more pressing research interest. They argue that the research focus should be on the process by which firms cross the behavior threshold from domestic to international. Their reasoning is "that if the first

step has been taken, then the following questions regarding, for example, specific marketing strategies, pose no fundamental problems. Consequently, we concentrate on the overall decision to go international...(p. 50)." This dissertation concurs with their reasoning and, as is stated above, the central research question concerns the issue of *why* firms internationalize. However, there is a substantial body of literature that focuses on *how* firms internationalize, that is, Dichtl, et. al.'s second facet of the problem statement. To ignore this body of literature would unnecessarily limit this dissertation's presentation of the current state of the researcher community's understanding of the internationalization process.

If addressing the question of *how firms internationalize* is less interesting than the question of *why firms internationalize*, then why is there a substantial body of literature on the subject of how? A possible reason is that one of the dominant paradigms within the management field is the Chandler-Rumelt-Thorelli school of thought where the operative causal model states that firm strategy sets firm structure which in turn sets firm performance. In the context of the two research questions, this model suggests that a given internationalization strategy will ultimately determine the firm's successes and/or failures in their international endeavors--the strategy will shape how the firm structures its internal organization to handle international efforts which, in turn, determines performance. If the focus of this research is primarily to understand firm performance in international markets, then concentrating on how the decision to go international is implemented is justifiable. For this dissertation, the objective is to understand the process, not just the end results. Consequently, the

literature on how firms internationalize is reviewed to gain insights on (1) the decision processes of the firm, (2) the motivations for choosing particular internationalization strategies, and (3) the key factors that make possible the internationalization of the firm. Knowing how firms implement the internationalization process will identify key resources that facilitate the process. The explanation for why only some firms internationalize then becomes an empirical question of whether or not "domestic-only" firms lack these key resources.

How do firms internationalize? The literature suggests that the implementation of the internationalization decision is a function of the same three general factors that are relevant to domestic business decisions: strategy, firm structure and the external business environment. However, researchers have suggested that certain specific factors are unique, or at least more critical, to international business decisions. These include long term planning, management's commitment to new markets, market research focusing on culturally based differences in tastes and preferences, and access to outside resources and expertise (both public and private). Researchers contend that these tactical factors are important because international sourcing, marketing and sales involve a range of challenges not encountered in domestic markets. These include language barriers, differences in cultural values and social mores, diverse safety and health regulations, diverse product standards and labeling requirements, currency exchange and rate fluctuations, and tariff and non-tariff barriers. Researchers have concluded that a decision maker's perceptions of these challenges greatly influences how the firm enters international markets.

1.3 *A Priori* Suppositions

1.3.1 Unit of Analysis: The Firm vs. the Market

Management and marketing researchers typically focus on issues internal to the firm. Neo-Classical and Industrial-Organization economists typically focus on issues external to the firm. In the former, the external environment (e.g., the market) is exogenous to the analysis and its only relevance is in how the environment affects a given firm's behavior. In the latter, the internal environment is the exogenous variable (e.g., the firm as a "black box"), and firm behavior is only understood in terms of the collected effects of the behavior of all firms on market performance.

This dissertation draws from both approaches. As was argued above, there is a need for *firm-level* analysis of the internationalization process--a need that favors a management/marketing research approach. But there also is a need for the theoretic discipline of the economists. Both approaches give insights into the issues at hand and blending the two provides a more comprehensive framework that is more useful than either would be independent of the other. Thus, this dissertation focuses on the perceptions of decision makers and the internal processes underlying the behavior of individual firms, but does so within the context of an economic-based framework for analyzing this behavior. This framework is developed in full in Chapter 4.

1.3.2 Firm-level Driving Forces of Internationalization

This research begins with the supposition that *at the firm level* the decision maker is guided by three critical questions regarding international markets: (1) Are there customers for my company's product/service? (2) Can my company compete

against other firms in meeting the needs of these customers? and, (3) What are the rules of the game for competing in these markets? The first question, if stated in economic terms, simply asks if there is market demand for the company's products/services. The second asks if the firm has a competitive advantage in the production and supply of the good (i.e., in the physical transformation of inputs into an output). The third asks if the firm has a competitive advantage given its governance structure and the institutional constraints of the market (i.e., from a transaction cost perspective). Hence, this dissertation begins with the *a priori* assertion that perceived demand, perceived competitive advantages in transforming, and perceived competitive advantages in transacting are the three "driving forces" of the internationalization process. This implies that the reason why a firm internationalizes is because the decision maker perceives that there is demand for the firm's product and, given its competitive advantages in transacting and transforming, the firm can competitively supply this demand. One of the principal objectives of this dissertation is to test and refine (or refute) this supposition.

To date, the literature on the internationalization process has conceptualized a different set of driving forces than those just proposed. Most published research has focused on one or more of the following: (1) the idiosyncracies of the decision maker (e.g., international experience and travel, foreign language skills, level of education); (2) the characteristics of the firm (e.g., size, market focus, type of product/service produced); and/or, (3) the general market, political and trade environment external to the firm (e.g., customs, tariffs, exchange rates, government export promotion

programs). The dissertation's proposed driving forces are not intended to reject those proposed in the literature. Rather, they are an attempt to synthesize the three strains of published work with a single, coherent framework.

1.3.3 The Role of Perceptions and "truth"

Since this dissertation focuses its analysis *at the firm level*, modeling the influences of the three driving forces on the internationalization process must, by definition, be done within the context of the firm. More specifically, the decision maker's prescriptive choices about whether or not the firm should internationalize must be modelled as a function of the decision maker's knowledge of the three driving forces. But decision makers are constrained by imperfect information and bounded rationality. As they make choices about international markets, a potential "gap" exists between the actual, "true" level of demand for products and the decision maker's perceptions of that demand. A similar gap can exist between what the decision maker thinks are his/her firm's competitive advantages and what the advantages actually are. In acknowledging this gap, this dissertation defines "truth" (little "t") as positive, value-free knowledge that is based upon synthetic representations, summaries and/or measures of real world phenomenon. Perceptions about truth are assumed to be decision makers' best estimates of this truth, and are, in this way, the actual determinants of the internationalization process. Therefore, this dissertation's representation of the internationalization process will be based on the assertion that decisions related to international markets are based on decision makers'

perceptions of the driving forces, and perceptions, not "true" conditions, are the focus of the model.

1.4 Organization of the Dissertation

The dissertation is divided into nine chapters. Chapter 2 reviews the internationalization literature and reports what past research suggests are the reasons why firms internationalize. Chapter 3 reviews basically the same body of literature to report what researchers have suggested are the reasons why only some firms internationalize. Chapter 4 presents a theoretic model of the internationalization process. Chapter 5 outlines the overall approach to data collection and analysis of the dissertation, and provides a justification for the multiple approaches used to gather and analyze data. Chapter 6 reports the results of a series of interviews of managers of Michigan-based agri-food firms. Chapter 7 documents a mail survey of Michigan-based agri-food firms that was designed, in part, on the basis of the insights gained from the interviews reviewed in Chapter 6, as well as the theoretic model of Chapter 4. Chapter 8 reports the results of the statistical analysis of the mail survey responses. Chapter 9 summarizes the results of the study and synthesizes its prescriptive implications for agri-food firms, researchers and policy advisors.

CHAPTER 2 WHY FIRMS INTERNATIONALIZE

The first step in developing a more complete model of why firms internationalize is to review the wide range of theories and partial models that researchers have proposed in the past. Nearly all of the reviewed body of literature can be grouped under two general headings: research that has focused on factor endowments as the principal determinants of foreign market activities of firms, and research that has focused on market imperfections as the principal determinants. The literature review that follows is structured around these two tracks with Section 2.1 addressing factor endowments and Section 2.2 addressing market imperfections. Section 2.3 briefly covers some recent published works that do not fit neatly into these larger categories. The chapter concludes with an attempt to synthesize the lessons to be learned from the reviewed literature.

2.1 Economic Theory – Focus on Factor Endowments

2.1.1 Ricardian Trade Theory

Internationalization research and theory traces its history back nearly 200 years to Ricardo and his work on international trade. In trying to explain and demonstrate why countries trade goods, Ricardo developed the concept of comparative cost

advantage. Prior to Ricardo, theorists believed that two countries would only trade goods if each had an absolute cost advantage in the production of one of the goods. Ricardo was the first to suggest that even in the case where one of the two countries had an absolute cost advantage in both goods, it still could benefit from trade by producing (and exporting) only the good for which it had the greatest absolute cost advantage. In other words, benefits of trade can arise from comparative cost advantages. Blaug (1985), in writing about Ricardo, provides a succinct, contemporary definition of this concept: "[E]ach country will produce those goods whose alternative costs are relatively lowest, alternative costs being the number of units of one good that must be forgone to produce a unit of another good (p. 126)."

The driving forces of Ricardo's model, that is the sources of comparative cost advantages, are differential technological capabilities among countries and the relative immobility of capital across national borders. In other words, countries are endowed by nature and fate with different levels of immobile factors of production (i.e., capital and technology). These differences in the supply of available inputs give rise to comparative cost advantages across countries.

Undoubtedly, Ricardo set the stage for research in internationalization. As Blaug contends, Ricardo was the first to suggest that international trade was different from intra-national trade. And Ricardo's comparative cost analysis is still the

fundamental pillar that supports one of the extremely few policy prescriptions which is widely accepted in economics--that free trade increases social welfare².

Yet, as is reviewed in the next section of this dissertation, many aspects of Ricardo's work have been abandoned (or at least modified significantly), in part because of significant changes in the state of the world (e.g., increased mobility of capital and technology, regional trading blocks), but also because Ricardo fails to acknowledge the role of demand in international trade. As Blaug points out, comparative advantage "shows how nations gain by trade, but it fails to tell us how the gain from trade is divided among the trading countries. The actual barter terms of trade...depend not only on cost conditions but also on the pattern of demand...International prices are governed by supply *and* demand (pp. 123-125)." Tweeten adds that "differences in preferences can bring benefits from trade among countries possessing exactly the same factor endowments and production possibility curves (p. 24)." In other words, consumers' heterogeneous tastes and preferences can explain why a country would simultaneously import and export essentially identical products that differ only in their country of origin (e.g., cheese, wine). Since the time of Ricardo, these nuances of international trade have led to the development of a substantial body of literature on the economics of trade, highlights of which are reviewed in the following section.

²Krugman notes that "the defense of free trade [is] as close to a sacred tenet as any idea in economics (1987, p. 131)."

2.1.2 Contemporary Trade Theory

Trade theory has evolved into an important field within the economics profession, and this dissertation will make no attempt at providing a comprehensive review of the field's entire body of literature. Only highlights are provided.

For much of the latter half of this century, the main focus of economic trade theory has been built around a two-product, two-country general model in which each country is capable of producing either good. One of the predominant models that is based on this general model is known as the *Heckscher-Ohlin (H-O) synthesis*. In this model, factor endowments (i.e., the supply of capital and labor) differ between countries, and within each country factor intensities (i.e., the ratio of capital to labor needed to produce a unit of output) differ across commodities. Since technologies are assumed to be mobile in this model (i.e., technology is the same in both countries), the driving forces of the model are the differences in factor endowments, manifested in differences in relative prices for inputs (i.e., capital and labor) across countries. Two of the principal conclusions of this model are that (1) countries will concentrate their production on and produce more of the good that requires a relatively higher level of the input that the country has a larger endowment of (e.g., a labor abundant economy will produce labor intensive outputs), and (2) in the absence of trade distorting policies and other barriers, relative prices for both mobile and immobile factors of production will equalize across all countries, given the assumptions of the model.

In general, the two-product, two-country trade models presented in the literature are variations of the same basic theme. The models relax one or more of the assumptions associated with such models in order to either make the models "less abstract" or in an effort to highlight a particular effect of trade (e.g., income distribution). Commonalities across these models do exist, as noted by Krugman. He suggests that the models share a number of basic features:

1. The productive capacity of an economy can be summarized by its production possibility frontier, and differences in these frontiers give rise to trade.
2. Production possibilities determine a country's relative supply schedule.
3. World equilibrium is determined by world relative demand and a *world* relative supply schedule that lies between the national relative supply schedules (1991, p. 92; emphasis in original text).

Implied in Krugman's summary is another common characteristic of these models. They all focus on market performance, aggregate firm behavior and international trade between countries, not companies. For this reason, researchers have noted that trade models are very limited if the analysis is intended to explain why a particular firm would choose to export.

2.1.3 Foreign Direct Investment Models

Starting in the 1960s with the emergence of multi-national corporations (MNCs), new research questions concerning trade and internationalization became relevant. At the core of this new area of study was the question of why an MNC would choose foreign direct investments over either exporting domestically produced goods or establishing cooperative agreements (e.g., joint ventures) with "local"

companies based in targeted foreign markets. Dunning (1977, 1981, 1988) attempted to address this question with a paradigm that is now commonly referred to in the literature as the "eclectic paradigm of international production." Going beyond the Ricardian concepts of comparative advantage, Dunning proposes a set of three "advantages" that explain why firms make foreign direct investments. The model is widely cited, in part because it is one of the original attempts to expand the concept of factor endowments to help "explain" the choices of *individual firms*.

Given the numerous permutations of sourcing, producing and marketing domestically and/or abroad, Dunning defines the scope of his work as investigating the capabilities and incentives of domestic firms to supply local and/or foreign demand with foreign-based production facilities. Even though Dunning has consistently limited his analysis to the choices MNCs make about the location of their production facilities, other researchers have extended the paradigm to model a firm's choice of foreign entry mode or even to model internationalization, per se. Yet, in his restatement of the paradigm in 1988, Dunning was explicit in his intent: "The intention was to offer a holistic framework by which it was possible to identify and evaluate the significance of the factors influencing both the initial act of foreign production by enterprises and the growth of such production (p. 1)."

Dunning's paradigm starts with the assertion that an enterprise with foreign-based production must have access to and use of certain "resource endowments" that local enterprises (i.e., enterprises in the country where the foreign production is based) do not have access to and/or do not use. Dunning (1981) defines the term

"resource endowments" quite broadly to mean "assets capable of generating a future income stream; they include not only tangible assets, such as natural resources, manpower and capital, but intangible assets, such as knowledge, organisational and entrepreneurial skills, and access to markets (p. 25)."³ He contends that preferential access to and use of endowments implies that a firm has a competitive advantage (also referred to as monopolistic advantage) in the market, and that *this advantage determines the extent, form and pattern of international production*. He then specifies three sets of advantages as perceived by enterprises--"ownership advantages", "internalization advantages" and "location advantages".

Dunning's original description of ownership advantages (1981) specified three kinds. The first of the three was largely based on Bain's theories on barriers to entry such that firm size (e.g., economies of scale), monopoly power (e.g., patents) and better resource capability and usage (e.g., management skills unique to the firm) led to ownership advantages. The second kind of ownership advantage was inherent in the benefits a branch plant had vis-a-vis other new, independent market entrants. Dunning noted that branch plants, unlike *de novo* entrants, had access to endowments (e.g., knowledge of markets, administrative experience) at zero or low marginal costs. The third kind of ownership advantage resulted from the very nature of being an MNC. As Dunning observed, the "larger the number and the greater the differences between economic environments in which an enterprise operates, the

³In his more recent work (1988), Dunning uses the term "factor endowments" in place of "resource endowments", with no apparent change in their operative definitions.

better placed it is to take advantage of different factor endowments and market situations (1981; p. 27).⁴ Dunning re-specified his notion of ownership advantage in later work (1983, 1988). In this work, he distinguishes between two types of ownership advantages--asset and transactional. Ownership advantages that are asset-based exist because an enterprise vis-a-vis other MNC has exclusive, "proprietary" possession of specific assets due to structural market imperfections. Ownership advantages that are transactional in nature exist when an enterprise realizes gains from a common governance structure that transcends national borders (vis-a-vis using the international market-place) due to transactional market imperfections.

To Dunning, internalization advantages are closely related but separate from the transactional ownership advantages just noted above. Internalization advantages reflect the benefits of transferring ownership advantages across international borders *within* a firm rather than selling them or their use in external markets.⁴ Thus, Dunning makes a distinction between two types of gains. First, the gains to a firm from common governance structures across international borders are a source of ownership advantages; or, in his words, these gains are "the 'why' of international production." Second, the gains to a firm from using internal hierarchy's rather than external markets are a source of internalization advantages; or, in his words, "the 'how' of international production". In his 1988 article, he defends this distinction as

⁴Dunning (1988) summarizes the literature on why firms internalize markets, specifying three main kinds of market failure which motivate internalization: (i) risk and uncertainty in the market; (ii) economies of scale in imperfect market situations; and, (iii) transactions which generate costs and benefits external to the terms of exchange.

both useful and logically correct. In his opinion, common governance structure provides the *capability* to capture the gains of internalization while benefits from reduced transaction costs due to internalization provides the *willingness* to internalize. He concludes that a firm's willingness to internalize markets "may explain why hierarchies rather than external markets are the vehicle by which transactional ownership advantages are transferred across national boundaries...[but the capability to internalize markets] explains why these advantages are exploited by one group of multinational enterprises rather than another, or by multinational enterprises rather than firms indigenous to the country of production (pp. 3-4)."

Location advantages, as noted by Dunning in his 1981 article, exist because of immobility of endowments (i.e., they have to be used where they are located), making them determinants of "the 'where' of production." Expanding this concept, Dunning, in a subsequent article (1988), proposes that enterprises, facing the constraints of immobile endowments, will engage in foreign production whenever they perceive that benefits will result from combining "spacially transferable intermediate products produced in the home country with at least some immobile factor endowments or other intermediate products in another country (p. 4)." Starting with what is essentially Ricardo's comparative advantage argument, Dunning then highlights numerous additional reasons (what he collectively terms "spatial market failures") for why this combination of intermediate products and immobile factor endowments could be necessary and beneficial for a firm. Local governments creating trade barriers are an example of spacial market failures that are structural in nature. Dunning also

proposes that these failures can be related to the costs of transacting across international borders. Common governance of cross-border activities could yield benefits such as "enhanced arbitrage and leverage opportunities, the reduction of exchange [rate] risk and better coordination of financial decision taking, the protection afforded by a hedged marketing or multiple sourcing strategy, and the possibility of gains through transfer price manipulation, leads and lags in payments (p. 4)."

Dunning recognizes the general nature of his three types of competitive advantages. In attempting to make operational ownership, internalization, and location advantages, he specifies examples of proxies (i.e., structural and contextual variables) for identifying and measuring competitive advantages (1981). Dunning organizes these proxies under the headings of country, industry (activity), and firm-specific variables. Returning to these headings in his 1988 article, he asserts that there is general consensus within the literature "about the main country and industry characteristics likely to influence each of the main components of the eclectic paradigm, [but] much less attention has been given to identifying the key attributes of firms (p. 7)." This historic deficiency in the literature is particularly noteworthy because Dunning proposes that firm behavior, perceptions of the firm, and the strategic responses of decision takers within a firm are likely to be major sources of influence on decisions about international production. As he states, "firm-specific characteristics may be a crucial determinant of the response by multinational enterprises to any particular OLI [ownership-location-internalization] configuration (p. 6)." He concludes by observing that firm behavior, in many ways, is

generalizable; that is to say, there are systematic or consistent responses by firms to similar OLI configurations. As long as this is true, Dunning believes that firm-specific variables should be incorporated into the modeling of the international production decision.

Dunning presents the most current conceptualization of his "eclectic" paradigm in an 1988 article. This version is his response both to criticism of earlier versions of the model, and to theoretic advances and empirical observations that have been reported in the literature since the model's debut. He contends that the study of international production must be holistic and be based on "two strands" of economic analysis. Quoting Dunning (1988):

The first is neoclassical theory of factor endowments, extended to embrace intermediate products, and to allow for the possibility that some endowments are mobile across national boundaries. *Ceteris paribus*, the more uneven the geographic distribution of factor endowments, the more international production is likely to take place...The second strand is the theory of market failure...*Ceteris paribus*, the higher the transaction costs of using the market as a transactional model, and the greater the efficiency of multinational enterprises as coordinators of geographically dispersed activities, the more international production is likely to take place (p. 11).

He renames this model, referring to it now as the "factor endowment/market failure paradigm" and in so doing, states explicitly that he is trying to expand the scope of his model by blending its focus on factor endowments with ideas from the other major line of research (i.e., market failures) that has been developed to explain why firms internationalize.⁵ He then attempts to illustrate the explanatory power of this model

⁵Thus, Dunning in his later work tries to bridge the two main tracks of research on internationalization (i.e., Sections 2.1 and 2.2 of this literature review).

by first suggesting that there are *de facto* three "main types of international production"--market seeking (import substituting), resource seeking (supply oriented), and efficiency seeking (rationalized investment). He then presents his case that the various aspects of competitive advantage (OLI advantages) "explain" the existence of these three types of production.

As noted throughout the preceding review, Dunning's work provides numerous insights into the internationalization process itself as well as how to model the phenomenon. Insights particularly salient to this dissertation include (a) the identification of competitive advantages as a driving force behind internationalization, (b) the importance of market failures, specifically transaction costs, to choices about international production, and (c) the conceptualization of the process as reversible, such that firms enter, expand, contract and/or exit from international activities based on their perceptions about market opportunities that are based on evolving competitive advantages unique to a firm. Further, Dunning's work provides an example of how to synthesize into one model/paradigm a wide range of hypothesized determinants of international investments, even if that synthesis appears more like a patchwork quilt than finely woven linen. As Itaki points out in his comprehensive review of the "eclectic paradigm," this synthesis is both a strength and a failing of Dunning's work. The strength is in the paradigm's flexibility in incorporating theoretic advances. The OLI framework itself is easily preserved as long as these new ideas logically "fit" within the context of ownership, internalization or location advantages. This is particularly useful empirically, given the uniqueness of individual firms. Yet,

according to Itaki, the failing is in the paradigm's inability to ascertain "which items [i.e., determinants] are most decisive in attracting foreign direct investment.

Theorists, empiricists, and historians can freely invent new determinants to describe a particular case of foreign direct investment as long as they fall under one of the three headings (p. 456)." In Itaki's mind, clearly the paradigm's failings outweigh its strengths. He notes that the eclectic theory is not a theory but "a taxonomy of various determinants" and that this taxonomy has the potential of being tautological. He concludes that "factors of production and 'advantages' must be as non-substitutable as possible and remain relatively few in number if the concept [paradigm] is to remain *meaningful for expounding, rather than describing*, economic phenomena (p. 456, emphasis added)."

2.1.4 Synthesis of "Factor Endowment" Literature

Researchers have attempted to explain international trade through a series of "factor endowment" models, all with their own, albeit similar, sets of assumptions and causal relationships. Proposed factor endowments have included land (or more generally, natural resources), labor and/or capital, and technology. Some researchers, Dunning in particular, have suggested a more comprehensive view of factor endowments that also includes intangible assets like knowledge, organizational and entrepreneurial skills, and access to markets. Once identified, factor endowments have been characterized in several ways: by whether the quantity of the factor is variable or fixed within each country's economy (i.e., either immobile or tradable; either renewable or exhaustible), and by degree of transferability from the production

of one kind of good to another. These models have also made assumptions about consumer demand (e.g., its elasticity), and tastes and preferences (e.g., homogeneous or heterogeneous within and across national borders; constant or variable over time).

Researchers have manipulated these numerous assumptions as they have varied the operative research question being addressed. Ricardo wanted to demonstrate that trade in the absence of absolute cost advantages could still generate welfare gains for society as a whole. The OH model was crafted to demonstrate that the type of goods exported reflect the factor endowments of a country. Other two-country, two-good models sought to demonstrate the effect of an increase in the supply of one factor of production (i.e., Rybczynski's Theorem) or to demonstrate which sectors of an economy would win (or lose) from trade. Alternatively, Dunning sought to address issues about individual firms and their decisions about international production.

As the focus of these models shifts from the macro-economic issues of demonstrating the gains from trade for society as a whole to the micro-economic issues of demonstrating the gains from trade for individual firms, the driving forces of the models and the causal relationships that they demonstrate change. Table 2.1 highlights these shifts over the historic evolution of this body of literature.

Table 2.1 Proposed Driving Forces Underlying "Factor Endowment" Models of Trade Theory

Model	Hypothesized Driving Forces
Ricardo's Model of Comparative Costs	Differences in productivity due to differences in available technology
The Heckscher-Ohlin Synthesis	Differences in productivity due to differences in available resources
Dunning's Model of Foreign Direct Investment	Privileged (monopolistic) access to factor endowments

2.2 Management Theory -- Focus on Market Imperfections

Juxtaposed to the economist's focus on factor endowments is the business school's focus on market imperfections. These researchers have studied constraints on knowledge and information to understand the perceptions and motivations that decision makers have about international market "opportunities." Like Dunning's OLI model, the seminal articles of this body of literature were attempting to explain the rise of MNCs in the 1960s. From this foundation, researchers have built an extensive body of published works that focuses on much more than MNCs. As is evident in the review that follows, management theory expanded beyond a focus on the capital flows and investments of MNCs to focus on the full spectrum of choices available to a company as it decides how to become involved in international markets.

2.2.1 Stages Models

In the mid-1960s, internationalization theory began to diverge from the more general international trade theory. In his 1966 article, Vernon cited several limitations of and contradictions to the prevailing trade theory (e.g., import substitution theories of development economics, Leontief's paradox, and the emergence of common markets). To address these and other short-comings of the prevailing theory, he suggested an alternative line of inquiry which "puts less emphasis upon comparative cost doctrine and more upon the timing of innovation, the effects of scale economies, and the roles of ignorance and uncertainty in influencing trade patterns (p. 3)." From a methodological perspective, Vernon's article helped initiate a Kuhn-like paradigm shift in how researchers conceptualized and modeled internationalization. This shift can be attributed as much to the loss of explanatory powers that resulted from the strict assumptions (i.e., heightened abstraction) required of rigorous economic models of trade theory, as from the failings of those theories to accommodate real world phenomena.

Vernon's research is designed to explain international trade and capital movements in the context of U.S. MNC investments in Europe and in countries with relatively low-labor cost. Vernon proposes a step-wise evolution of product development within the firm (i.e., the product cycle). This process of new product innovation, product maturation and finally, product standardization in global markets, establishes a unilateral, deterministic *stages* model of international investments. As the product's "life" proceeds through the product cycle the incentives and costs

associated with producing and transporting the product also change. As foreign demand for the product increases, the ability of a firm to service that demand by exporting domestic production decreases. But, the decision to invest overseas is far more complex than simple cost considerations (i.e., marginal production costs at home plus transportation costs is less than average production costs at a foreign site). Vernon recognized that investment decisions include a degree of uncertainty and ignorance and highlighted the fact that firms have limited information to estimate the prospective average production costs at a foreign site. Moreover, even if a firm could determine with relative certainty that a particular foreign site would offer a lower production cost alternative, Vernon contends there is no reason to conclude that a firm would make such an investment. He notes that empirical studies have shown that international investments do not follow the rational choice, cost minimization model, but rather are motivated by perceptions about other competitors (both local entrepreneurs and other exporters), government policies, and other threats to market share and access. As he notes, "threat in general is a more reliable stimulus to action than opportunity is likely to be (p. 8)."

One conclusion drawn from a synthesis of Vernon's ideas is that international investments are outcomes of a dynamic process that evolves through a series of stages. The process is driven by supply (product innovation) and demand (changes in tastes and preferences). Market imperfections such as ignorance, uncertainty, and asset specificity (what Vernon refers to as "inflexible, capital-intensive facilities") heighten the complexity of investment decisions. As foreign demand and market

experience increases, ignorance and uncertainty are reduced, leading to reduced disincentives to invest internationally. Hence, investment incentives are directly related to the product cycle whereby the stages of international investment parallel the stages of product development.

As Buckley and Ghauri note, Vernon's contribution to internationalization literature is significant. His recognition that internationalization was a dynamic evolution of a firm's incentives and choices is now almost universally accepted within the literature. And his stages approach, though no longer tied to the product cycle, is still commonly applied to internationalization research and analysis. One aspect of his work which has not always been sustained in the literature but has relevance to this dissertation is Vernon's holistic, systemic conceptualization of the process. Since he notes that demand *and* supply interact to influence the choices firms make, the total system is accounted for in his approach.

Starting in the mid-1970s and continuing for the next decade, a series of articles extended Vernon's ideas and brought stage models into prominence. Two of the earliest articles, one by Johanson and Wiedersheim-Paul and the other by Johanson and Vahlne, established a stages model of internationalization which is often referred to as the Uppsala Model of Internationalization. Most subsequent internationalization literature has referenced this model as the theoretical benchmark for this area of research. In these two articles, the authors present internationalization as a gradual process in which information acquisition through market experiences

changes a firm's perceptions about risks and opportunities, and hence changes firm behavior.

Johanson and Wiedersheim-Paul present four case studies of internationalized firms. Based on observations about these four firms, they conclude that firms gradually work through an "establishment chain" of internationalization stages. Distinguished and defined by the degree of market involvement, four stages are identified: (1) no regular export activities; (2) export via independent representatives (agents); (3) establishment of a sales subsidiary in foreign countries; and, (4) production/manufacturing in foreign countries. Johanson and Wiedersheim-Paul note that the four stages (i.e., degree of involvement) imply "successively larger resource commitments and...quite different market experiences and information for the firm (p. 17)." They also note that two factors--"psychic distance" and market size--are critical to the choices firms make about extending their market activities into foreign countries.⁶ They conclude that "generally, the development of the [four case study] firms seems to be in accordance with the incremental internationalization view (p. 30)."

Building on the empirical observations of Johanson and Wiedersheim-Paul, Johanson and Vahlne propose a formal model of internationalization. This model attempts to explain why foreign market entry follows a series of incremental stages.

⁶Psychic distance is defined as "factors preventing or disturbing the flows of information between firms and market. Examples of such factors are differences in language, culture, political systems, level of education, level of industrial development, etc. (p. 18)."

One of their key assumptions is that the process is dynamic, such that "one decision--or more generally one cycle of events--constitutes the input of the next (p. 36)."

Their model is structured with two sets of variables--state variables (i.e., market knowledge and market commitment) and change variables (i.e., commitment decisions and current activities). The dynamics of the model play out as follows. A firm's state of internationalization (i.e., its current state of market knowledge and market commitment) affects perceived risks and opportunities, which in turn affect both commitment decisions and the way current activities are performed. These in turn change the state of the firm (i.e., lead to changes in market knowledge and market commitment), thus bringing the process full cycle.

In creating this model, Johanson and Vahlne's explicit goal was to identify a "basic mechanism" that would explain all the stages of internationalization. They claim that the evolution of a firm's "knowledge" and "commitment" resulting from the dynamic interplay between the proposed state and change variables is such a mechanism. In other words, their model of internationalization is driven by the acquisition of knowledge and the commitment of resources. The authors then attempt to make these two driving forces operational.

They make "knowledge" operational in several ways. First, they cite Carlson for a general definition of knowledge, where "knowledge 'relates to present and future demand and supply, to competition and to channels for distribution, to payment conditions and the transferability of money'(p. 38)." In narrowing their conceptualization of knowledge, they also make distinctions between objective and

experiential knowledge and between general and market-specific knowledge. These distinctions are then used to explain internationalization, since, as the authors note, experiential knowledge of foreign markets can only be attained by actually participating in these markets. The same is true of market-specific knowledge. Hence, a key constraint to rapid entry into foreign markets is the lack of market-specific knowledge that can only be attained over time through first-hand experience in the chosen markets. At this point, the authors also apply the concept of "psychic distance" since domestic market-specific knowledge is likely to be most applicable to those foreign markets that are close to domestic markets in psychic distance.

Johanson and Vahlne make "commitment" operational in terms of (a) the amount of resources committed to the market, and (b) the degree of commitment. The amount of resources is measured as the size of investment "in marketing, organization, personnel, and other areas (p. 38)." Degree of commitment is measured as the degree of difficulty in finding an alternative use for employed resources and transferring these resources to this alternative use—a definition which closely resembles Oliver Williamson's concept of asset specificity. Hence, the internationalization of a firm is driven, in part, by the ever increasing size and specificity of the firm's investments in foreign markets.

The authors add that increases in the size and specificity of investments are not assumed to happen automatically, but rather are a result of a complex, dynamic chain of events. The dynamic cycle begins with a firm's given set of commitment decisions—their current level of operations in a market. The authors assume that

opportunities and/or problems are most likely to be "discovered" (i.e., perceived) by those parts of the organization that are responsible for operating in the market, and the chosen solutions and/or responses to problems and/or opportunities will be an extension of operations in the market that complement existing operations. In other words, investments are made based on perceived opportunities and/or problems which are in turn dependent on a firm's market experiences. The cycle continues since, over time, a firm will make two types of commitment decisions (i.e., investments): scale-increasing and uncertainty-reducing. These two types of decisions lead to incremental increases in market experience and incremental reductions in uncertainty, leading to a new set of perceived opportunities and/or problems. This brings the cycle full circle, and begins the process anew.

In 1990, Johanson and Vahlne revisited their internationalization model to assess whether the prior twelve years of empirical studies had confirmed or disproved their model. They summarize their model as follows:

Internationalisation of the firm ...is seen as a process in which the enterprise gradually increases its international involvement. This process evolves in an interplay between the development of knowledge about foreign markets and operations on one hand and an increasing commitment of resources to foreign markets on the other (p. 11).

This implies that internationalization is a result of incremental changes in knowledge and commitment of resources. As the authors note in their 1990 article,

Experiential market knowledge generates business opportunities and is consequently a driving force in the internationalisation process. But experiential knowledge is also assumed to be the primary way of reducing market uncertainty. Thus, in a specific country, the firm can be expected to make stronger resource commitments incrementally as it gains experience from current activities in the market (p. 12).

Having restated their model, Johanson and Vahlne cite fifteen different empirical studies that "confirm" the basic conclusions of their model--that internationalization is a gradual process, that resource commitments are incrementally increased, and that psychic distance, as a means of making operational the concept of market-specific experiential knowledge--have some explanatory power about the foreign market entry decisions of firms. They conclude that "the empirical research confirms that commitment and experience are important factors explaining international business behavior (p.14)."

Although Johanson and Vahlne's model is a widely accepted benchmark within the literature, critics have noted several of its shortcomings. In an early critique, Reid (1983b) noted that the stages model is based on the assumption that internationalization is the result of the firm's "level of export sales dependency [such that]...the firm is viewed as passing through a series of sequential and evolutionary stages as this dependency increases (p. 44)." Reid contends that this assumption is fundamentally flawed since it ignores "the crucial issue of how market characteristics and firm resources co-determine choices and changes in particular export structures. ...Given that an export sales criterion conceals varied market behaviour[,] its ability to explain a strategic dimension of firm growth is debatable (p. 44)." Reid, in several other publications (1983a, 1984, 1987), further develops his argument. He demonstrates that internationalization is not a result of a deterministic evolution manifested in a series of stages, but rather a function of a "peculiar" (i.e., situation-

specific) combination of firm and market characteristics, and the opportunity set of potential organizational responses to these characteristics.

Turnbull, building on Reid's critique, adds that there are both interpretive and methodological problems with stages models. For example, he notes "the lack of clear distinctions between internationalization stages and confusion in their measurement (p. 25)." He also criticizes the deterministic nature of the models, since empirical findings show that even firms with considerable international experience use organizational forms that the stages models hypothesize are only used in the early stage of internationalization (e.g., exporting through agents). A third issue that Turnbull raises is the literature's inconsistency in typologies for identifying and classifying firms along the internationalization continuum. Suggested typologies are based on either the firm's "export activity", "export orientation", or "organizational form." Comparison of research findings based on different typologies is difficult because correlations across activity, orientation and organizational form do not necessarily imply interchangeability across classifications. Further, since the organizational form is both part of the internationalization process and a result of it, Turnbull hypothesizes that there is no reason to believe that the choice of organizational form follows a sequential evolution. He concludes, "there may be limited correspondence between a company's stage in export development and the organizational structure it employs (p. 26)."

Andersen also provides a critique of the stages model of internationalization. His critique focuses on the epistemological "soundness" of Johanson and Vahlne's

model. He first notes that the authors do not specify the initial conditions of their model, and thus fail to provide any insights into how the internationalization process begins. He then invalidates one of the core explanatory mechanisms of the model. As outlined above, Johanson and Vahlne propose a process of causal cycles in which increases in market knowledge lead to increases in market commitments and vice versa. Yet, as Andersen notes, "based on the definition of market commitment (the amount of resources committed), and the fact that market knowledge could be regarded as an intangible resource, the explanation above is in fact tautological (p. 216-7)." In other words, by increasing market commitment, one is by definition also increasing market knowledge, leaving only correlation and not causation within the model. This point aside, the model also fails to specify the *mechanisms* for how "knowledge" transforms "commitment" and vice versa. And lastly, employing Popper's falsifiability criteria, Andersen finds the congruence between the theoretical and operational levels of the model quite lacking.⁷ As he states, "clear linkages between the theoretical and operational level are missing (p. 221)," making it impossible to test the stated model using the falsification criteria. Andersen concludes that,

In explaining the movements from one stage to the next, some of the included variables--such as information seeking and local market orientation--may be epiphenomenal with the operationalization of the stage concepts, and thus represent tautologies. The cross-sectional design implies that the variables in fact cannot *explain* the process.

⁷Blaug (1992) provides a brief definition of Popper's falsification criteria, "In short, you can never demonstrate that anything is materially true but you can demonstrate that some things are materially false (p. 13)."

Rather, they *describe* the firms belonging to the different stages (p. 225; emphasis added).

Given this assessment (stages models describe, rather than explain firm behavior), the validity of Johanson and Vahlne's conclusion that twelve years of empirical research confirms that commitment and experience *explain* international business behavior appears tenuous. An alternative conclusion is that knowledge and commitment are simply *key correlates* to a firm's international business behavior.

2.2.2 Innovation-Adoption Models

Responding, in part, to the criticism that stages models lack a clear explanation of what initiates the internationalization process, researchers in the late 1970s and early 1980s began to investigate the decision processes that lead to foreign market entry and expansion. For at least two reasons, much of this work can be viewed as an extension of the earlier stages models. First, this literature focuses on exporters and exporting. As noted above, stages models postulate that one of the initial stages of internationalization involves exporting. Given that most researchers who were investigating the initial conditions for internationalization to occur chose to investigate exporters implies a certain debt to the earlier work. Second, most researchers model the adoption of the "innovation," i.e., exporting, as a series of stages that take the firm from being a non-exporter to an exporter.

Andersen, in his critical assessment of internationalization literature, identified four key articles within this particular research track: Bilkey and Tesar, Cavusgil (1980), Czinkota, and Reid (1981). He labeled this set of articles "innovation-related internationalization models," noting that the common thread linking these articles was

that they all viewed internationalization as an innovation for the firm. The articles "focus on the learning sequence in connection with adopting an innovation...[and] are derived from Roger's stages of the adoption process (Rogers 1962, pp. 81-6) (p. 212)." Andersen contends that the only substantive difference between these four articles is the postulated mechanism that provides the incentives to start exporting. By his account, two of the articles (Bilkey and Tesar, and Czinkota) postulate that this incentive is a "pull" mechanism which is external to the firm (e.g., an unsolicited order from abroad). The other two articles portray the firm as more pro-active in its decision process, indicating a "push" mechanism (e.g., active search for export opportunities). Otherwise, Andersen suggests that "the differences between the models seem to reflect semantic differences rather than real differences about the nature of the internationalization process (p. 212)."

Although Andersen's conclusions provide a useful summary of these four articles, specific insights from each of them are lost in his generalizations. For example, two observations by Bilkey and Tesar are particularly salient to this dissertation. First, in summarizing their empirical findings, Bilkey and Tesar note that an important variable in determining whether or not a firm would explore the feasibility of exporting was "managements' *perceptions* of their firms' *competitive advantage* (p. 94, emphasis added)." Second, in their conclusions, they note that, "[l]earning theory is applicable to the export development process (p. 95)." In actuality, this statement is the only reference the authors make that directly links their model to the innovation-adoption literature that Andersen uses as the basis for his

grouping of these four articles. Reid (1981), on the other hand, explicitly builds his model based extensively on the adoption-of-innovation model. As he notes, "it is apparent that those particular individual characteristics which have been found to be associated with adoption of innovation behavior are also likely to be implicated in export adoption behavior (p. 104)." Reid emphasizes the role of the individual decision maker, given the resource constraints of the firm. He concludes that managerial knowledge, attitudes, motivation, experience, and expectations are the primary determinants for firms choosing to engage in foreign market entry and expansion.

Cavusgil (1990) reiterates his innovation-adoption model for internationalization approximately ten years after it was originally published. Although the model is unchanged, Cavusgil updated his text and synthesized the implications of the past decade's empirical work in internationalization research. He notes three major conclusions: (1) involvement in foreign markets is a gradual process; (2) involvement can be regarded as an innovation within the closed environment of the firm; and, (3) firm's initiate exporting decisions without much rational analysis or deliberate planning. Cavusgil interprets these conclusions to mean that behavioral variables and individual firm characteristics are fundamental in explaining firm-to-firm variations in foreign market entry and expansion. He notes that this represents a clear break from neoclassical economics since the "internationalization process does not appear to be a sequence of deliberate, planned steps, beginning with a clearly defined problem and proceeding through a rational

analysis of behavioral alternatives. Personal characteristics of the decision-maker's lack of information, perception of risk and presence of uncertainty seem to be especially valuable in understanding firms' involvement in international marketing (p. 157)."

Dichtl *et.al.* provide an earlier review of the export-entry decision (i.e., the innovation-adoption) literature. Although most of their insights have been updated and supplemented by later work (e.g., Andersen), several key points have relevance to this research. As noted in Chapter 1, Dichtl *et.al.* make a fundamental distinction between the "overall decision to go international" and the subsequent set of decisions and strategies to implement the overall decision. Their perspective is that the critical research question is, "How do non-exporting firms overcome their 'threshold of fear' to capitalize on latent, unutilized export potential as new entrants in foreign markets?" They propose a "multi-phased" model of how firms overcome this threshold. Their "decision-oriented model of the commencement of export activities" proposes a linear progression through three levels: (1) an incentives level, defined by firm characteristics, domestic and foreign markets, and the non-economic environment; (2) a level of filters, i.e., the environment, firm and decision maker; and, (3) the decision-making level, i.e., problem identification, information seeking, generating and evaluating alternatives, export intention, trial and evaluation, and acceptance/rejection of exporting. One may note that this third level is essentially an adaptation of the innovation-adoption models. Dichtl *et. al.* conclude that to understand the decision process for entering and expanding into foreign markets,

researchers must look at firms long before they are actually exporting. "If one strives to establish how and why non-exporters turn into exporters, the analysis has to pry into the decision process long before the export debut of a firm. Failing to do so will invariably produce statements which are a direct reflection of managers' desire to rationalize their actions (p. 58)."

Lim, *et. al.* provide a synthesis of the innovation-adoption literature as background to their empirical test of the model's postulates. They conceptualize the innovation-adoption process as a four-step causal model where "awareness" influences "interest" which then alters "intention" which then leads to "adoption." Their mail survey of selected Ohio light industries yielded 438 usable questionnaires (representing a 23% response rate), the data from which were analyzed using structural equation analysis. Their results provide further insights into the internationalization process. Although they found statistically significant direct effects of interest on intention, "the direct effects of awareness on interest, and of intention on adoption were found to be relatively weak (p. 59)." The authors speculate that the weak linkages between awareness and intention could be accounted for by "psychological barriers perceived by managers of small firms." They attributed the weak linkages between intention and adoption to "specific situational factors such as a lack of competitive advantages or of an understanding of export procedures which tend to increase the chances of failure of their trial export efforts (p. 59)." Given the limited nature of this study, these conclusions may not be generalizable. However, they do corroborate the need for further research about the overall importance of

managers' perceptions, the importance of a firm's competitive advantages, and the potential detrimental effect of "export procedures" (i.e., transaction costs) on a firm's decision to enter and expand into foreign markets.

2.2.3 Transaction Cost Models

Williamson (1975, 1985) has developed an extensive paradigm for evaluating the interface between organizational structure and the market. The general concept of transaction costs is that markets are not entirely frictionless, i.e., a firm incurs costs as it transacts (buys and sells) in the market place. In order to optimize these "transaction costs," firms decide whether a given transaction should be conducted either internally (i.e., by a common governance structure within the firm) or externally (i.e., in the market place with other firms). Within the context of internationalization literature, numerous references to transaction costs have already been noted in this review. Researchers have generally recognized the explanatory power of Williamson's work and have attempted to incorporate its theoretic implications into existing models. Several authors (e.g., Reid, 1983b; Anderson and Gatignon) have extended the application of transaction cost theories beyond these efforts to "fit" transaction costs theories into existing paradigms. These authors have built alternative internationalization models that are largely based on Williamson's ideas.

Reid (1983b) proposes that transaction cost theories are a means of explaining how exporting is first developed and then institutionalized within a firm. His proposal is more of an approach for understanding and conceptualizing exporting

decisions rather than a formal model, but he does make a strong case for analyzing internationalization from a transaction cost perspective. He lists a series of determinants of firm behavior (e.g., firm resources, market structure, export opportunities) linked to characteristics of transactions (e.g., frequency, volume, diversity and value). He notes that in the context of exporting, these determinants and transaction characteristics interact in a way that is more complex, or at least different, from domestic market exchanges. As Reid states, transactions, and hence transaction costs, are the common element "in all structural arrangements for handling export activity and appear to be fundamental considerations in limiting and defining the character and extent of an export market opportunity (p. 55)." This implies that the key to understanding exporting decisions is the linkage between the determinants and characteristics listed above, made operational as the costs of transacting in international markets. Reid concludes that a "transaction costs perspective [in export analysis] conceptually requires a focus on actual operating climates and is bound to sensitize investigators to what actually occurs within the firm. Transactions as a central concept in export analysis has the merit of recognizing supply and demand factors simultaneously, thus enabling the link between firm, channel and customers to be fully appreciated (p. 53)."

Anderson and Gatignon develop a complete framework based on transaction cost theory; it analyzes a firm's decisions concerning entry mode into foreign markets. They begin their work from the perspective that "control" (i.e., "the ability to influence systems, methods, and decisions," p. 3) is and should be the focus of

entry mode research. This is because, in their opinion, "control is the single most important determinant of both risk and return (p. 3)." They then identify seventeen modes of entry, grouped by the degree of control that they represent (i.e., high, medium and low-control modes). The authors couple the level of control to four sets of constructs which they have developed from transaction cost theory: transaction-specific assets, external uncertainty, internal uncertainty, and free-riding potential. The authors then propose that an analysis of these constructs for a given internationalization setting will indicate the most appropriate (i.e., "most efficient") mode of entry. For example, for highly specialized assets, a high-control mode of entry is most efficient, where efficiency is largely defined as the trade-off between level of control and the cost of a given resource commitment. Anderson and Gatignon conclude that their transaction-cost framework "brings to the entry mode problem an emphasis on the growth of ties that bind, on uncertainty, on balancing of risks (credible commitments) and on the scale of operations (p. 23)."

Alternatively, "network" literature represents a different extension of the basic tenets of transaction costs theory--that how firms choose to transact directly influences firm performance. Network literature has also been identified by internationalization researchers as a potential area of study that would further the collective understanding of the internationalization process. Dunning (1988) suggests several areas of study as possible theoretic extensions of the eclectic paradigm, and included in this list is a call for "a more systemic approach to examining the strategic behavior of multinational enterprises--using, for example,...network analysis (p. 11)."

Similarly, Johanson and Vahlne (1990) use the concept of industrial networks as a basis for a critique of their own model. In both cases, authors of established paradigms are suggesting ways to modify and update their work to incorporate insights from the "network" literature.

The concept of industrial networks has arisen from empirical observations about how industrial firms conduct transactions. Researchers have noted that most of these transactions are not discrete, independent events but rather are part of a *network* of long-term relationships among such actors as suppliers, buyers, sellers and providers of services. As D. Deo Sharma notes,

business firms operate in a context and are enclosed in a web of relationships with external actors (firms, industries). Actors possess a unique identity. Each relationship exerts influence either directly or indirectly... Relationships have a purpose and a structure; they facilitate resource exchange in a network... [An] industrial network consists of three inter-connected components, i.e., actors (firms), resources, and activities (p. 4).

After developing these ideas in his paper, Sharma concludes,

In essence, then, in networks actors exchange resources and complementary relationships develop. Complementarity implies that each actor is expected to carry out certain 'specified' activities. Trust and commitment are important. In so doing actors combine their own resources with those acquired from others to produce an output valued by the network (pp. 6-7).

Network analysis--the study of networks and their influence on firm performance--is relatively new (developed as a research field within the last fifteen years) and is hampered by the qualitative and usually intangible nature of networks. Networks are built on cooperation, trust, personal relationships and, on occasion, develop through formal contractual agreements (though these contracts never fully capture the totality

of the relationships between actors, legal or otherwise). Hence, network analysis is generally descriptive, systemic in nature, and often limited to simply identifying actors and how they are related.

For Johanson and Vahlne (1990), the link between network analysis and the analysis of the internationalization process is in how firms interact. Their model of market knowledge and commitment blends very well with the concept of networks, given that networks reflect trust, cooperation, and shared knowledge and commitment among actors. They note that internationalization via a network is one possible route by which firms expand into international markets. For example, this can occur when one actor internationalizes, pulling other actors within the network into the new market situation (e.g., when a supplier, in an effort to not lose business, follows one of its customers into the international arena). Johanson and Vahlne conclude that networks can act either as a constraint (e.g., a new market entrant not established within a local network has no access to that network's resources) or as a facilitator to internationalization (e.g., a network actor can rely on the support of the network as it enters and expands into new markets).

Hood and McArthur provide an example of how network analysis is used to help explain the internationalization of an industry. Their analysis of the European electric industry included the empirical observation that various partnerships and alliances in the electric industry have been developing across international borders for the past fifteen years. The authors conclude that there had been a long history of "public interest" networking within the industry (e.g., industry standards, load

sharing, capacity planning) which then became the basis for the partnerships and alliances that formed in the late 1980s and early 1990s. As they note, "long before it was [technologically] possible to gain access to each other's home markets, there already existed a tradition of collaboration and information sharing, some of which has now begun to convert into forms of internationalisation of business interests. This type of behavior is predicted within much of the industrial networking literature (p. 32)."

2.2.4 Synthesis of the "Market Imperfections" Literature

Researchers of management and marketing theory have proposed that the internationalization behavior of the firm is a function of one or more market imperfections. Much of the focus has been on the role of knowledge, learning and how uncertainty affects a decision maker's perceptions and motivations. The effects of transaction costs have also been considered. The general notion is that because of these imperfections, firms enter international markets gradually. Thus, this process evolves over time as decision makers incrementally step through several stages of a learning process.

These models focus on the individual firm and its decision maker. The primary objectives of these models are to explain the choices made by these decision makers and to understand how these choices determine the level of involvement in and commitment to international markets. Unlike economic models, these models assume that information is neither perfect nor costless, that markets are not a costless

mechanism for bringing together buyers and sellers, and that international marketing and sales are fundamentally different from domestic marketing and sales.

The litany of causal relationships proposed in this body of literature is expansive. Vernon suggested in 1966 that product innovation and changes in consumers' tastes and preferences led to internationalization. He went on to note that a firm's perceptions about other competitors, government policies, and other threats to market share and access were motivating factors behind internationalization decisions. Alternatively, the Uppsala School proposes that experiential market knowledge and the evolving level of resources a firm commits to international markets drives a dynamic internationalization process. Several other authors have viewed the entry into international markets as an innovation for the firm. These researchers suggest that the adoption of this innovation is primarily a function of the decision maker's past experiences, and current attitudes, expectations, perceptions and motivations. Still other researchers examine internationalization in terms of transaction costs. To these researchers, the decision to enter international markets is based largely on the firm's relationships with buyers and sellers in the market, and the costs of transacting with these other players. All of these proposed relationships are based on assumptions that violate traditional neo-classical economic theory. Table 2.2 summarizes the models and identifies the key market imperfections that violate these assumptions.

**Table 2.2 Market Imperfections & Models of How Firms
Internationalize: Violations of Neo-Classical Economic
Assumptions That Drive the Internationalization Process**

Model	Hypothesized Driving Forces
Product Cycle	Dynamic Production Function <ul style="list-style-type: none"> ▸ Dynamic Returns to Scale ▸ Dynamic Functional Form Dynamic Tastes and Preferences
(Learning) Stages	Imperfect Information Uncertain Resource Commitments
Innovation-Adoption	Imperfect Information Decisions made outside the rational choice model
Transaction Costs	Markets are not frictionless Transactions are not completed by faceless, nameless, anonymous buyers and sellers

2.3 Recent Developments

Two relatively new tracks of research have been purposed recently that attempt to extend the scope of internationalization literature. The first, Yang, *et. al.*'s "market expansion ability" model, purposes a means of predicting future firm behavior in international markets. The second, a set of articles on "*gestalts* of firms," purposes a holistic approach of categorizing firm behavior. Both tracks of research are relevant to this dissertation because they also contribute further insights into why only some, but not all, firms internationalize.

2.3.1 Market Expansion Ability

Yang, *et. al.* examined yet another dimension of the internationalization process using a model that screens non-exporting firms for the purpose of identifying those non-exporters which have a high potential of becoming exporters. By focusing on the pre-export stage, these authors provide one of the most relevant analyses for understanding the catalysts (i.e., the necessary and sufficient conditions) for initiating the internationalization process. Their model builds on the assumption that current export behavior is a reflection of time-lagged export intention. Because of this time-lag, Yang, *et. al.* model export intention as their dependent variable, which they propose to be a function of (1) a firm's market expansion ability (MEA), and (2) barriers to exporting (BE). The authors define export behavior as the actual status of a firm's export activity. Export intention is defined to include not only immediate export plans but also long term, but as of yet unspecified (in terms of specific foreign markets, products, or time schedules) aspirations to export. Market expansion ability is a composite variable which is determined by a firm's past expansion behavior (in domestic markets) and current competitive capabilities.⁸ Barriers to export are broken down into three classes: *external* (e.g., tariff and non-tariff barriers, foreign exchange fluctuations, foreign market competition, government policy, foreign business practices, and differences in consumer and/or product standards), *operational*

⁸Past expansion behavior is specified as the rates of change on three factors: domestic market coverage, firm size and ownership structure. Current competitive capabilities include the variety of the firm's distribution channels, the width of the firm's product line, the presence of slack resources, the quality of the firm's goods/services and technology employed, and the level of the firm's production costs.

(e.g., difficulty in receiving payments, locating prospective customers, arranging transportation and shipping, customs, and establishing adequate market presence in foreign markets), and *internal* (e.g., inadequate export experience, lack of managerial commitment, and insufficient human and physical capital).

Yang, *et. al.* make these variables/constructs operational and test their model empirically. Their results indicate that many aspects of their proposed model correlate well with export intention. As such, their research provides the groundwork for further analysis of the internationalization process. A needed "next step" is to research the question, "Why do you or do you not intend to export, as the case may be?" Yang, *et. al.* have provided easily replicated and measurable variables that correlate to intention, but they have not completely addressed the issue of what motivates that intention. Further, their objective was to generate a model that *predicts* a particular behavior. Although the model is relatively successful to this end, it does little to *explain* a particular behavior.

2.3.2 *Gestalts* of Firms

Yet another approach to understanding and modeling the internationalization process of firms is based on the assumption that there is a finite number of "archetypes" or "*gestalts*" which can be used to classify firms and predict their behavior. Strandkov calls for the need to identify patterns in the structure and strategies of firms which can then be used to establish a typology of firms based on their varying degrees of internationalization. He concludes that this type of research will "imply a split-up of a sample into different homogeneous parts according to some

desired similarity criteria instead of drawing sample-wide generalizations as done in previous research. By looking simultaneously at a large number of variables that collectively define a meaningful and coherent part of a firm reality, it should be possible to identify common types of internationally oriented corporations, business situations, etc. (p. 214)"

Macharzina and Endelhard provide a more detailed development of this approach to studying firm internationalization. In their work, they argue that continued research based on the Uppsala process model and/or Dunning's factor endowment/market failure model will yield few, if any, new insights. They propose that researchers need to consider conceptual alternatives which address the research issues from "a more *holistic approach* (p. 28)." They argue that studying internationalization from a *gestalt* perspective provides a research method which is (i) process oriented, (ii) based on a dynamic contingency approach which includes environmental, structural, and strategy-making variables in a holistic orientation, (iii) based on assumptions which reflect the systemic nature of organizational reality, and (iv) based on longitudinal quantitative analysis of organizational histories which yield organizational taxonomies. Although they do not provide any empirical applications of their approach, they do create a set of illustrative "models" of *gestalt* configurations for non-, reactive, and active exporters based on their review of the internationalization literature. Macharzina and Engelhard conclude that their "GAINS" approach (i.e., the Gestalt Approach of *IN*ternational business Strategies), and *gestalts* in general, provide a "middle range approach" which avoids both the

limits of narrowly focused bivariate-oriented research (i.e., much of the management research) and the limits of research based on broadly sweeping assumptions and generalizations (i.e., much of the economic research).

2.4 Why Firms Internationalize

This chapter began with the premise that in order to understand why agri-food firms are internationalizing in today's evolving market, one must first understand the underlying causal forces that motivate decisions about whether or not to enter (or exit) international markets. To answer this question, the chapter has reviewed, albeit incompletely, two historic tracks of research that have been developed during the past thirty years and highlighted two new ideas that also contribute to the general understanding of the process. The large volume of published work on internationalization and trade, combined with a diversity of purported models and theories from several fields of study may give this body of literature (and hence, this review) an appearance of being a disjoint patchwork of empirical findings, inductive reasoning and spurious correlations. There are, however, recurring themes and general concepts that transcend the literature and help explain why firms internationalize. Collectively, these concepts represent the generally accepted parameters for modeling the internationalization of markets and firms, and summarize what is known about why firms internationalize. The main concepts are listed below in bold, each followed by a short summary.

A dynamic process: The internationalization of markets and firms is best conceptualized as a dynamic process of incremental change over time. Although the various models in the literature differ in what they hypothesize as the change mechanisms and the underlying causal relationships, the models universally conceptualize internationalization as a process of change and evolution within the firm. Most models also included feed-back mechanisms that re-enforced the process, driving the firm to further degrees of internationalization with the passage of subsequent time/market periods.

When these models are made operational, the literature suggests that the internationalization process of the firm should be conceptualized in terms of one to three sets of determinants (i.e., the idiosyncracies of the decision maker, the characteristics of the firm, and/or the nature of the environment surrounding the firm) that dictate the choices made by firms. And given these choices, the resulting firm performance (however specified) feeds back to the decision maker's choices in subsequent periods.

Uncertainty and Risk: Robison and Barry define an uncertain event as an event that has more than one possible outcome but with the likelihood of each outcome described by a known (or at least estimated) probability distribution. They define a risky event as an uncertain event for which the outcomes will alter the well-being of the decision maker. They also note that, "if an individual can specify an event's outcome with insignificant doubt, he faces certainty. If knowledge is insufficient to specify a unique outcome [set] the individual faces uncertainty (p. 12)."

Given these definitions, there is near universal acceptance in the literature that internationalization involves uncertainty and risk. And the decision maker's go/no go choice to internationalize the firm is a risky event with the outcomes of either choice altering the well-being of the decision maker and the firm. Hence, internationalization is inherently uncertain and risky.

Imperfect Markets: International markets are far from the neo-classical economic vision of atomistic markets of many price-taking buyers and sellers, with perfect information, perfect mobility of all resources, no economies of scale, no barriers to market entry, and no costs in transacting. Every article reviewed in this chapter has been built on a set of assumptions that violated at least one, and sometimes all, of these basic tenets of the neo-classical model. In these same articles, market imperfections have been presented as both the causal forces and the unintended consequences of the internationalization process. In general, international markets are presented as distinct from domestic markets primarily because of heightened (or unique) institutional, structural and/or physical constraints to the basic flow of market demand and supply. The internationalization literature does not, however, abandon completely the ideas of economic theory. It is still assumed that firms try to keep revenues profitable and costs minimal, and the markets still have a role in coordinating exchange. These objectives and roles simply are more limited and constrained (and thus, more complex) than asserted in the neo-classical model.

Relative Advantages: In international markets, market imperfections create the relative advantages a given firm, industry or country has over its competitors.

These relative advantages provide the opportunity for firms to develop and exploit competitive advantages in the market, and are at least part of the reason why a firm trades internationally. Market imperfections can lead to the creation of competitive advantages because they make it possible for a given firm to have privileged (monopolistic) access to limited resources. Although the models differ on which resources they specify as being essential to the internationalization process, it is the access to these resources (however specified) that ultimately determines the international marketing opportunities of a firm. Resources that have been specified as essential are readily classified under two general headings: resources contributing to the production process (e.g., immobile factors of production) and resources that are informational, experiential and institutional in nature (e.g., market knowledge learned through experience, optimal mechanisms for conducting exchange).

Perceptions: Given the assertions about imperfect information mentioned above, researchers have modelled the internationalization process for an individual firm as highly dependent upon the perceptions of the firm's decision maker. Of less relevance are "objective facts" about the "true state of the world," largely because decision makers act as filters through which data and information must be understood and given meaning before decisions about international activities are made.

An important nuance about perceptions is implied, but rarely expounded upon in the literature. Although researchers tend to agree that perceptions are important, they often differ on how they answer the question, "Perceptions about what?" These differences are reflected in the causal relationships hypothesized in the assorted

models of the internationalization process, and whether these models are past-, present-, or forward-looking in their perspective. For example, stage models tend to emphasize perceptions about past performance since these perceptions capture what the decision maker has learned from earlier choices. Dunning's OLI and Yang, et. al's MEA models emphasize perceptions about the current state of the world since these perceptions capture what the decision maker sees as his/her firm's current opportunity set. Innovation-Adoption and Transaction Cost models emphasize perceptions about what the consequences of current choices will be, thus summarizing what motivates those choices.

The conclusion of the literature review: Privileged (monopolistic) access to resources (ranging from immobile factor endowments to experiential information) and the perceptions of the decision maker (as compared to what's really out there) combine to give a firm competitive advantages in international markets. Given these competitive advantages, a decision maker makes choices about internationalizing the scope of the firm's operations in an environment of risk and uncertainty. Over time, these choices (i.e., firm behavior) evolve. Also over time, firm performance (however specified) in international markets alters the resource base of the firm and provides feedback that decision makers use to update their perceptions of market opportunities and their firm's competitive advantages.

CHAPTER 3 WHY ONLY SOME FIRMS INTERNATIONALIZE

Paraphrasing the problem statement from Chapter 1, an overall objective of the dissertation is to develop a more comprehensive, coherent model of the driving forces underlying the process by which smaller firms internationalize. As the first step towards addressing this issue, Chapter 2 reviewed literature from several fields of study (e.g., economics, management, and marketing) to better understand why a firm would internationalize. This chapter reviews much of the same literature to better understand why *only some* firms choose to internationalize. This is primarily accomplished by researching those firms that do internationalize to determine how they do it. As was noted in Chapter 1, a review of research that focuses on why a firm internationalizes can help identify the driving forces underlying the internationalization process, while a review of research on how firms internationalize increases an understanding of (1) the decision processes of firms, (2) the motivations for choosing particular internationalization strategies, and (3) the key resources within firms that make internationalization possible--all of which is useful information for developing a comprehensive model of the overall internationalization process.

Researchers have examined the question of why only some firms enter international markets from three different perspectives: comparative studies of

exporters and non-exporters; descriptive studies of exporters to understand how those firms that do internationalize, do so; and, broadly focused studies of the micro-level influences of macro-level factors such as government policies, cultural differences, and industry-specific characteristics.

3.1 Comparative Studies of Exporters and Non-Exporters

Although "exporting" is not synonymous with "internationalization," researchers have used the study of export behavior of firms as a proxy for studying the full range of firm-level responses to international market "opportunities." As Rynning and Andersen note, "research on differences between exporters and non-exporters can be regarded as a simplification of models explaining the internationalization process (e.g., Bilkey and Tesar 1977; Cavusgil 1980; Czinkota 1982; Reid 1981), treating non-exporters as a homogeneous group (p. 74)." A number of comparative studies of exporters and non-exporters have been published in the literature.⁹ Most of these studies have been empirical in nature, being based on mail surveys or in-depth interviews, and have focused on one or more of the following research questions: Do differences in managerial attitudes explain why some firms export while others do not? Do differences in firm characteristics explain this dichotomy? And/or, do differences in the characteristics of the products sold

⁹Bodur suggests the following examples of exporter/non-exporter studies: Yaprak, 1985; Cavusgil and Noar, 1987; Burton and Schlegelmilch, 1987; Keng & Jiuan, 1989; Holzmüller and Kasper, 1990; Dichtl, Koelgmayer and Müller, 1990; and, Tseng and Yu, 1991.

explain why only some firms export? Survey articles reviewing this literature often classify articles focusing on the first question as "behavioral studies" and articles focusing on the second as "structural studies." The third question can be viewed as both structural and strategic in nature because the class of products a firm manufactures is primarily a structural variable, but the product's features, design and intended customer-base are primarily strategic variables. As will be discussed below, the literature has examined both of these aspects of product characteristics.

3.1.1 Behavioral Studies

Behavioral studies begin with the assumption that the manager's attitudes determine, to at least some degree, the likelihood that the firm is (or will be) internationalized. Given this supposition, these studies have focused on identifying specific attitudes that distinguish managers of exporting firms from managers of non-exporting firms. Two sets of attitudinal variables identified by Rynning and Andersen are "management's perceptions of expertise and strength in various functional areas,...and perceived risk of exporting (p.74)." To these, Baird, Lyles, and Orris add "perception of rapid environmental change" as a possible influence on the export decision, while Barringer, Wortman and Macy suggest that export inhibitions, defined as psychological processes that can cause decision-makers to restrain or hold back from pursuing realistic export growth opportunities, are important determinants of export behavior. Similarly, Byford and Henneberry conclude from their study of food processing firms in Kansas, Missouri and Oklahoma that "managerial apathy [about international sales] is one of the largest impediments to increased midwest food

product exports (p. 247).” Beyond identifying which attitudes matter, the conclusions from these studies often appear tautological. For example, it is commonly reported that exporters do not perceive international sales to be as risky as non-exporters, or that exporters perceive higher potential revenues from international sales than do non-exporters.

Researchers have also attempted to gauge differences in attitudes by measuring quantitative and easily replicable proxies. These include questions on the decision maker’s experience abroad, language skills, education and training, and willingness to innovate and take risks. Like the attitudinal studies, the conclusions are rather obvious. Managers of exporting firms are more likely to speak a second language, have travelled internationally, and are not as risk-averse as managers of non-exporting firms.

There are, however, dissenters among researchers who suggest that attitudes favorable to exporting are either not sufficient to internationalize the firm or are simply not relevant to the process. As Eshghi notes:

One would expect companies whose managers have a positive attitude towards exporting to be involved in exporting and those firms whose managers have a negative attitude towards exporting to be less likely to participate in export markets. At the same time, some managers may have *negative* attitudes towards exporting even though they are involved in exporting. Conversely, some *non-exporters* may actually be favourably disposed toward exporting. Such inconsistencies in exporting are not only possible, but quite likely either due to [the] presence of certain intervening conditions or to the attitude structure (p. 50).

Eshghi’s points, valid as they may be, are most likely exceptions. Given the evidence and empirical findings reported in the literature, the more convincing conclusion to be

drawn is that attitudinal variables provide at least a partial explanation of why only some firms export (i.e., internationalize).

3.1.2 Structural Studies

Differences in firm and/or product characteristics also have been proposed as an explanation of why only some firms export. Concerning firm characteristics, size (in terms of number of employees, gross annual sales, or percent of market share), age (years since founding), market coverage (local to national), links to service specialists, and the existence of formal in-house planning and/or administrative systems have been hypothesized as key structural differences between exporters and non-exporters. Concerning product characteristics, the general classification of the product (unprocessed commodity to "high tech" manufactured good) and its perishability have been explanatory variables examined in the export literature.¹⁰ However, these generalizations are not without caveats or critics within the literature. Critics note that none of the proposed structural variables, examined on their own, have proven to be the sole factor in determining that a given firm will or will not be an exporter. In fact, there is considerable debate about the relative importance of each structural variable.

¹⁰For example, studies by Baird, Lyles and Orris, and MacPherson concluded that exporting firms, as compared to non-exporting firms are likely to be larger, older, with a broader market coverage, and supported by links to service specialists and in house formal planning and administrative systems. And, studies by Byford and Henneberry, and Cavusgil and Nevin conclude that an exporter is more likely to sell a non-perishable, highly technical manufactured good.

Firm size is a good example of the ambiguity in the literature since firm size is one of the most extensively researched potential determinants of export behavior.

Despite the many articles on the subject, no clear consensus has been found that links a firm's propensity to export to its size. Empirical studies within this literature are unclear as to causal links between size and exporting tendencies. As Czinkota and Ursic note:

As far as size is concerned, some studies have found a positive relationship between firm size and percentage of total export sales (Reid, 1982; Cavusgil, 1984). Other studies have concluded that the correlation between firm size and export percentage exists only to a certain level, beyond which firm size and export percentage are not related (Czinkota and Johnson, 1983); (p. 243).

However, as Bonaccorsi (1992) notes, there are two issues concerning the relationship between firm size and export marketing: (1) the probability of being an exporter, and (2) the export intensity of the firm.¹¹ Unfortunately, the literature often has failed to make this distinction, merging the two issues in the analysis of firm size and exporting propensity. After an extensive review of the literature and analysis of her own survey of small firms in Italy, Bonaccorsi concludes that empirical findings do support the theory that the probability of being an exporter increases with firm size, but fail to support the theory that export intensity increases with firm size. Bonaccorsi's results are consistent with studies by Ali and Swiercz, and Samiee and Walters. Both of these articles assert that there are clear differences

¹¹There are multiple measures of export intensity suggested in the literature, including percentage sales from exports, market share in foreign markets, and/or number of countries to which the firm markets.

in attitudes between decision makers in small versus large firms, and it is these behavioral differences, not the size of the firm, that is much more relevant to a firm's export intensity.

The principal insight from the dozens of articles on the relationship between firm size and exporting activities is that firm size is, at best, an indirect proxy for understanding a firm's decision to export. Similarly, structural variables in general are often correlates to the export status of a firm. But because they are imperfect predictors of whether or not a given firm exports, one must conclude that either they have no causal link to the export decision, or more likely, they act en masse with managerial attitudes and perhaps other variables to collectively differentiate exporters from non-exporters.

3.2 Descriptive Studies of Exporters

Exporter studies can be classified into two broad categories: pragmatic studies of how firms actually export, and more theoretic studies that analyze the underlying strategies of exporting firms. The former are typically marketing studies of how firms identify and service international markets. The latter are typically management studies based on the Chandler-Rumelt-Thorelli concepts of firm behavior in which firm strategy sets firm structure which then determines firm performance. Studies examining how firms implement the decision to enter export markets are useful for identifying the resources and know-how needed for such ventures. Studies of management's export strategies shed light on how firms envision their future, perceive

their market opportunities, and then make relevant plans within the context of this mind-set.

3.2.1 "How To" Studies

Researchers have approached the subject of how firms internationalize with both large scale surveys of managers and highly descriptive case studies profiling firms or their managers. These studies have generated both empirical assessments of firm performance in international markets and pragmatic check-off lists designed to help "would-be" exporters understand the essentials of the exporting process and to appreciate the resources necessary for successful export ventures.

Examples of survey work include Madsen's study of the exporting practices of small- to medium-sized Danish manufacturers, Fraser and Hite's survey of 600 midwestern (U.S.) manufacturing firms involved in exporting, Liouville's temporal study (five years out of a thirteen-year period) of German mechanical engineering firms, and Kaynak's cross-regional study of Canadian exporters.

Case studies range from McDougall's formal case study of an Australian wine producer contemplating exporting to Dobson's analysis of the New Zealand Dairy Board's export strategy to the one-page summaries ("Exporting Pays Off") of active exporters that are printed in every issue of the U.S. Department of Commerce's biweekly publication *Business America*. Other examples of exporter profiles include Fraser's review of a plastic container manufacturer and Vasilash's feature on a machine tool company.

Examples of check-off lists include articles by Scott on Canadian exporters, Koepfler on "global marketing", Neubelt on how small- to medium-sized firms can export successfully, and Axtell on common mistakes made by firms entering an export market. Further examples are provided by government agencies, such as an exhaustive list of 89 questions and answers that "every agricultural exporter should know" published by the Foreign Agricultural Service of the United States Department of Agriculture, and a five step plan to exporting published by the International Trade Administration (ITA; 1991). Universities also have provided this type of information, including Miller's "ten-step road map to successful marketing."

Principal insights from how-to studies are a collection of "rules of thumb" that help lay a foundation for understanding the internationalization process. They highlight the importance of the following: long term planning, management's commitment to new markets, market research (particularly in light of cultural and social differences in tastes and preferences), selection of appropriate strategies for marketing (recognizing certain marketing challenges unique to exporting like tariffs, financing and currency exchange), and tapping outside resources and expertise (both public and private).

3.2.2 Export Strategies

Literature profiling exporters suggests that an explicit export strategy is a key to successful performance in international markets. For example, in his empirical study on export success factors, Madsen found that a firm's export marketing policies (i.e., strategies) had a greater positive effect on export performance than did firm or

market characteristics. Suzman and Wortzel state the case more strongly: "we are firmly convinced that if a firm is to be a successful exporter, it must develop an explicit strategy for doing so...(p. 183)." The general conclusion of export literature parallels the management field's general model of firm behavior; just as the general model proposes that firm strategy sets firm structure and thus determines firm performance, the export literature suggests that export strategy ultimately determines the firm's export performance.

Although the literature is generally consistent in its claim that explicit, formally planned export strategies enhance export performance, the specification and range of what is meant by "export strategy" is quite broad. Aaby and Slater, in their review of the internationalization literature published from 1978 to 1988, found studies linking export performance to five dimensions of strategy: market selection, product and product line, pricing, promotion, and distribution. Of these, market selection (both in terms of targeted countries and segments of consumers) and product specifications (typically in terms of Porter's generic competitive strategies based on differentiation, cost leadership or focused/niche marketing) have received the most attention in the literature. A separate, but equally extensive body of literature has focused on the strategic importance of channel selection in implementing the decision to internationalize the firm. A review of these dimension of export strategy follows:

Market Selection: As Cooper and Kleinschmidt note, "the strategy of *market selection* in export marketing involves two dimensions: the countries exported to and the level of market segmentation within these countries (p. 39)." Of these two, most

of the market selection research has focused on the selection criteria firms use to identify and screen potential countries for their international marketing and sales efforts. These studies focus more on the tactical decision rules for country selection (e.g., level of economic and institutional development, annual gross domestic product). But on a limited basis, the literature has discussed strategic options for the firm and has compared several strategic approaches: global coverage, regional coverage (e.g., Pacific Rim), coverage of markets that are psychologically close (e.g., only English-speaking countries), a "nearest neighbor" approach (e.g., Texas firms exporting to Mexico), or coverage on a case-by-case, country-by-country basis.

Product Specification: Researchers have focused on the degree and type of product differentiation as the principal strategic issue concerning product specifications. Two of the issues that have been examined are (a) how does the degree of product differentiation (relative to other products in the market) facilitate successful exporting and (b) should a firm offer a standardized product across all markets or modify the product to the specific needs of each export market. An example of the former is Kerr and Hobbs' analysis of U.S. beef exports to Canada, in which they conclude that product differentiation (relative to products already in the Canadian market) will enhance export performance. With standardization, Samiee and Roth survey firms competing in global industries and examine their choices of whether or not to offer a globally standardized product. They conclude that "the ability of firms to pursue global standardization may hinge on their international business philosophies and organizational structures (p. 15)."

Channel Selection: Research on channeling decisions emphasizes the diversity of marketing alternatives available to exporting firms. Labbé groups these alternatives as a choice between international (direct) investments or strategic alliances. In the latter, Labbé includes joint ventures, partnerships, consortiums, and licensing or distribution arrangements. Additional strategic options not mentioned by Labbé, but cited by others, include countertrade agreements and direct exporting.

Most of the recent research on the strategic importance of alternative channel structures has focused on strategic alliances. Examples include Bello *et. al.*'s evaluation of export middlemen and Mattsson's analysis of trading companies and their relations with small- to medium-sized firms. Other examples include Henderson and Sheldon's research on outbound and inbound licensing by U.S. firms and two case studies on international franchising--Fosu's on a livestock feed franchise in Nigeria and Whitehead's on the retail merchandiser Marks & Spencer®. Further examples include studies by Michaels, and Schaffer on countertrading.

In summary, the export strategy literature is inconclusive about prescribing a specific set of strategic choices to assure successful export performance. The literature's intellectual wealth is more in its thorough documentation of the full range of strategic choices available to the decision maker. Also, as Millington and Bayliss observed, the overall firm strategy, not only the firm's market or product strategies, must be internationalized. Bonaccorsi (1993) concurs that "export...strategy cannot be understood in isolation from the overall...strategy of the firm. The link between

export strategy and competitive strategy is a key to understanding export competitiveness of small firms (p. 49)."

3.3 Export Decisions and Factors External to the Firm

Researchers also have examined the potential effects of the external environment on the export decision. As Ansoff and McDonnell note, "a combination of economic, political and cultural differences can easily be as important in the new [international] marketplace as the competitive factors [dominant in domestic markets] (p. 215)." Similarly, Martin *et. al.* identify four factors affecting competitiveness of firms across national boundaries (as indicated by market share and profits). Three of these are outside the direct control of the firm: factors controlled by the government, quasi-controllable factors like input prices and demand conditions, and uncontrollable factors like the climate.¹² Building on these authors' ideas, the following review is organized by three sets of external factors: government policy, factors quasi-controllable by the firm, and macro-economic factors.

The research on the role of "government" in the internationalization process ranges from empirical case studies to policy prescriptions.¹³ For example, empirical

¹²Under factors controlled by the government, Martin *et. al.* listed the business environment (e.g., taxes, interest rates, exchange rates), international trade policy, R & D policy, education and training, "linkages" permitted across the vertical and horizontal chains of supply, and regulations/standards.

¹³This review, like the literature, defines "government" quite loosely, categorizing efforts by local, state, national and/or international (eg. the EC) agencies as that part of the environment under "government".

work includes Mawson's review of a proactive strategy by the City Council of Birmingham, U.K. to help make its local industries more competitive globally. Other examples are Boakes' discussion of the role of national promotional bodies in the European food industry, and the ITA's 1992 review of the services it provides to U.S. exporters as a means of facilitating trade. Alternatively, Naumann and Lincoln present a more policy-oriented approach in their exploratory study of non-tariff barriers and their influence on the exporting decisions of small firms. Similarly, Kühl reviews, in the context of agribusiness firms, the strategic implications of the newly formed internal market of the EC. Holzinger goes one step further by presenting a seven step strategy for the U.S. government "for keeping America competitive" in a global economy. Likewise, Nicholls *et. al.* provide a detailed plan for improving Jamaica's export performance via government promotion of "non-traditional" exports.

The principal quasi-controllable factor discussed in the literature has been demand conditions across cultures. As the ITA notes, "[u]nderstanding and heeding cultural variables...is critical to success in international business (1992; p. 30)." Schuster points out that cultural barriers are as important, if not more important, as trade barriers when marketing abroad. And Mayo reports that ethical problems¹⁴ affect how small businesses perform in international markets. However, cultural barriers are not absolute and thus quasi-controllable. As Harris notes, Kellogg® has successfully entered markets with "new" products, such as cold breakfast cereals, by

¹⁴Some of the ethical problems noted by Mayo include bribery, government interference, customs clearance, transfer of funds, technology/copyright theft, and immoral entertainment.

aggressively marketing their products to create demand in cultures that have never known their product line (e.g., Japan, Thailand).

Research on the macro-economy is beyond the scope of most reported studies. Given that the macro-economy is outside the controllable sphere of firms, many studies reference the importance of the macro-economy, but fail to document its specific influences on an individual firm's decision to internationalize. Typically, researchers have considered the macro-economic factors' influence on firm behavior, not when the decision to internationalize is made, but at the point where firms are attempting to identify and segment potential foreign markets. As Green and Kohli, and Day, Fox and Huszagh have noted, macro-economic factors like the size of a country's economy and level of socioeconomic development can be used for screening potential export markets.

This research on how external factors affect the decision to internationalize indicates that factors both within and beyond the control of firm management affect the decision. Firms are left with the choice of either reactive "damage control" as shifts in the external environment negatively affect firm performance or proactive strategic planning that incorporates dynamic environmental factors. Although this is also true in a strictly domestic environment, what appears to make the export literature unique is that a much stronger case is made for government intervention into the market. Further, this literature is much more explicit in its acceptance of a "systems" view of the world since it recognizes the interrelatedness of a multitude of factors in firm decision making and performance.

3.4 Why Only Some Firms Internationalize

The central conclusion of this chapter is that differences across firms in organizational competencies and capabilities are the key factors that explain why some firms internationalize while others do not. Whether these competencies and capabilities are best expressed as managerial attitudes, firm characteristics, or formally specified strategies is still a matter of debate, but researchers agree that competencies and capabilities in international marketing clearly differ across firms, and measurably contribute to a given firm's ability and propensity to internationalize. The published research leaves the reader at liberty to decide whether behavioral or structural variables or even export strategies ultimately determine export propensity and success. However, the overall message is clear: organizational competencies and capabilities are the latent deterministic variables that explain why only some firms internationalize.

When this conclusion is combined with the insights from Chapter 2, a more complete picture of the internationalization process becomes apparent. In Chapter 2, it was concluded that market imperfections create opportunities for firms to develop competitive advantages in international markets. The conclusion of this chapter suggests that organizational competencies and capabilities determine which firms actually develop these competitive advantages.

CHAPTER 4 PROPOSED MODEL AND UNDERLYING RELATIONSHIPS

The objective of this chapter is to develop a general model of the internationalization process. To this end, the chapter begins by blending the a priori suppositions of Chapter 1, the conclusions of the literature reviews presented in Chapters 2 and 3, and a general framework for analyzing a firm's market behavior proposed by Nielson and Sorenson. These ideas and concepts are combined to form a general theoretic model of the driving forces underlying the decisions made by smaller agri-food firms concerning the internationalization of their scope of operations. The chapter then outlines the applicability of the model, addressing two issues: Does the model represent an advancement over what is already known about the internationalization process (as reported in the literature)? And, what are the general parameters of the model (e.g., boundary assumptions, assertions about causality, necessary and sufficient conditions)? This is followed by concluding remarks evaluating the proposed model in terms of the model's general explanatory power and workability as a guide to empirical data collection and analysis.

4.1 A Flow Model of the Internationalization Process

The proposed model of the internationalization process begins with the assertion that causal relationships exist among opportunities, choices and outcomes. As Nielson and Sorenson suggest, variables relevant to appraising firm behavior "can be put into three general categories: outcomes, behavioral variables, and a set of variables that specify the internal and external conditions facing the firm (p. 71)." For these authors, outcomes (e.g., profits, market power, organizational adjustments) are the results that follow from actions taken by the firm. Behavioral variables are those factors that can be manipulated (e.g., choices concerning prices, amount and kind of promotion) to attain the ends sought by the firm. Internal and external conditions are those variables that influence the choice of actions taken and procedures established by the firm.

The three general categories suggested by Nielson and Sorenson are the basis for the proposed model of the internationalization process. For this purpose, "outcomes," "behavioral variables," and "internal and external conditions" are simplified and summarized as three sets of stock variables—an outcome set, a choice set, and an opportunity set. The *opportunity set* is defined as the demand for the firm's products and the firm's ability to competitively supply product to meet this demand, given a set of underlying characteristics of the firm and its surrounding market environment. The *choice set* is the set of prescriptive choices made by the firm's decision makers in response to their perceptions about the opportunity set. The *outcome set* is the set of consequences resulting from decision makers' prescriptive

choices. This set of consequences includes all changes in demand for the firm's product, changes in the firm's ability to supply the product, and changes in decision makers' perceptions about demand and supply.

The complete model develops as follows. The model begins with a set of stock variables that define the firm's opportunity set in market period one. Given this set of opportunities, managers make prescriptive choices about entering and/or exiting international markets. These choices represent a new set of stock variables that define the choice set. The stock variables of the choice set (i.e., the choices made about entering and exiting international markets) are subject to the forces of the market process and, through the market, a third set of stock variables, the outcome set, are generated. Since the outcomes are part of a dynamic system, they feed into and affect the firm's future opportunities in market period two and beyond. The feedback loop that links outcomes to future opportunity sets is a learning process that synthesizes outcomes and incorporates this learned information into a new and updated opportunity set, bringing the overall process full circle.

In this way, the constrained opportunity set determines a range of potential prescriptive choices, one subset of which is selected by the firm's decision maker. This subset, the decision maker's choice set, is subject to the economic forces of the market. The interaction of the choice set and market forces generates a set of outcomes. Because the firm learns from these outcomes, the outcome set alters the perceptions and realities associated with the firm's constrained opportunity set. This learning process leads to a new set of prescriptive choices and outcomes as the

process continues in an iterative and indefinite manner into the future. Figure 4.1 summarizes this model.

This model of the internationalization process is a comprehensive representation of the linkages between the internal workings of the firm and the external forces of the market, or as the economist might say, a representation of how the internal processes of the "black box" and the market's equilibrating "invisible hand" interact. For example, when the opportunity set is defined as a combination of perceived demand for the firm's products in international markets and the firm's ability to supply this international demand, the opportunity set is specified in terms of factors that are influenced by both the firm's internal workings and the external environment. And although the choice set is exclusively a function of the firm's decision maker, the outcome set is a direct consequence of market forces acting on the choices made. By modeling the internationalization process as dependent on both internal and external factors, the proposed model attempts to capture the totality of the internationalization process.

Decision Making

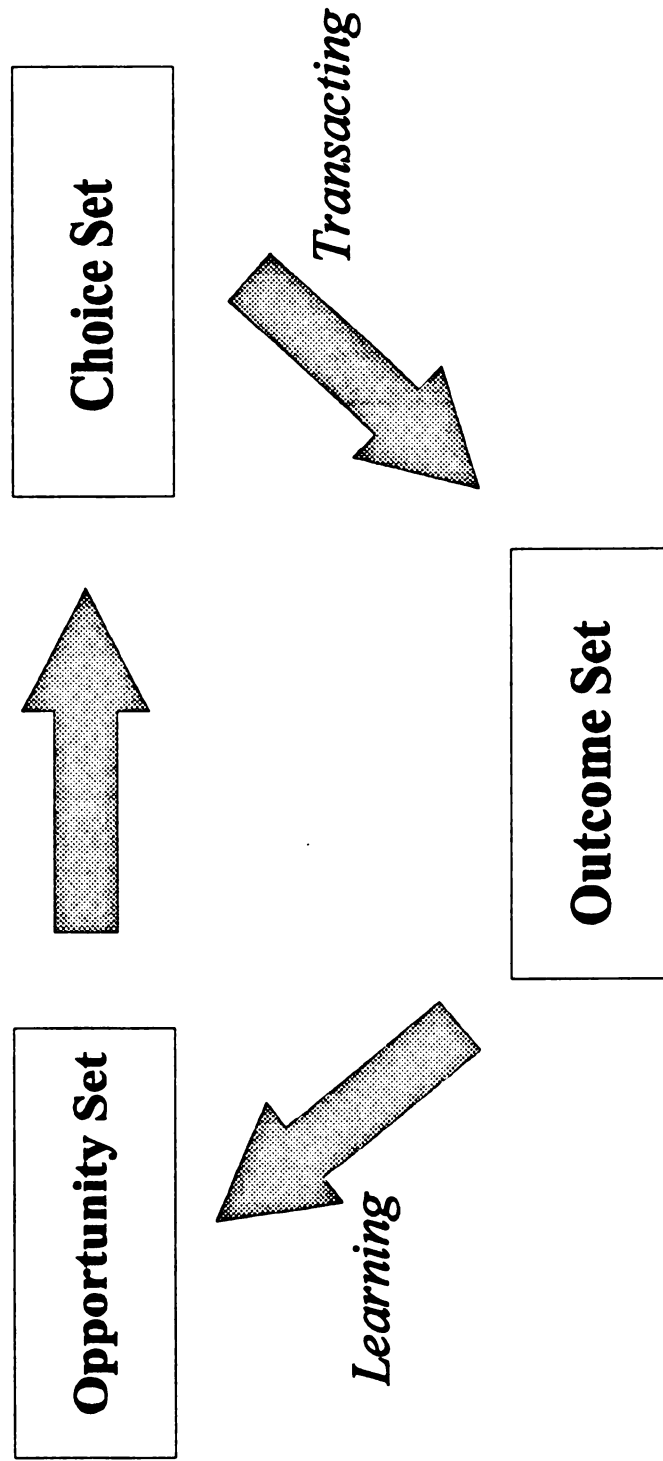


Figure 4.1 A Flow Model of the Internationalization Process

4.1.1 Opportunities, Choices and Outcomes

The following discussion more fully develops the three sets of stock variables identified in the flow model of the internationalization process.

Opportunity Set: The concept of an opportunity set in neo-classical micro- and welfare economics is understood in the context of rational choice. Samuels eloquently summarizes this, stating

The individual is posited to have an opportunity set of alternative lines of action each with a relative cost. Each economic actor operates under the condition of scarcity: his choice is limited by his means and by the costs of his opportunities...Given his opportunity set, his set of attainable choices and their respective costs, the individual chooses so as to maximize either his profits or his utility, adjusting through the equimarginal principle to attain the marginal conditions of a maximizing equilibrium. Diagrammatically this may be illustrated by the tangency of the highest indifference function to the budget-constraint line (1992b, p. 57).

Underlying this idea of choice within a constrained opportunity set are the fundamental notions of supply and demand. More specifically, economic theory asserts that the forces of supply and demand are the source and substance of the decision maker's opportunity set. For the economist, market and firm-level supply and demand curves are the defining foundation of the opportunity set.

Historically, supply is purported to be a function of labor and capital, and demand is a function of price and income. In a perfectly competitive market, the intersection of the demand and supply curves establishes market price and thus defines the firm's opportunity set. Contemporary extensions in neo-classical economics of the notions of supply and demand specify supply as a function of labor, physical capital and human capital, and demand as a function of price, customers' ability to pay and

preferences. At the firm-level, supply is typically specified as a production function and demand as a utility function.

The internationalization literature reflects these fundamental notions of the firm's opportunity set, though with some modifications. Synthesizing the conclusions of Chapters 2 and 3, the firm's opportunity set is determined by its ability to competitively supply products and services that meet the needs and wants (i.e., demand) of international customers. In this context, firm-level supply is a function of relative advantages, firm competencies and management perceptions, and demand is a function of price, and customers' ability to pay, tastes and preferences, and awareness of the product (but with most of the emphasis in the literature on the latter two). To make these concepts operational, the empirical research on the internationalization process has attempted to specify the firm's opportunity set in terms of three general classes of variables affecting supply (i.e., the idiosyncracies of the decision maker, firm characteristics and the environment encompassing the firm's sphere of operations) and a general set of demand variables (i.e., the idiosyncracies of international customers in terms of their needs, level of awareness, tastes and preferences).

The *a priori* suppositions of Chapter 1 are a simplified representation of the internationalization literature's supply and demand components of a firm's opportunity set, relative to the decision to internationalize. As was suggested in Chapter 1, this dissertation asserts that the decision to internationalize is a function of both the decision maker's perceptions of demand for his/her firm's products in international

markets, and the firm's competitive advantages in transaction and transformation costs in international markets. In other words, the suppositions in Chapter 1 specify the firm's opportunity set in terms of these three concepts: perceived demand, and two components of supply--competitive advantages in transformation costs and competitive advantages in transaction costs. The objective of Chapter 1's suppositions was to provide an operative specification of a decision maker's opportunity set that was simple yet comprehensive and with a minimum of inter-dependence across independent explanatory variables. Much of the empirical research reported in subsequent chapters of this dissertation focuses on testing the explanatory power of this specification of the opportunity set.

Choice Set: The choice set is the set of prescriptive choices made by decision makers in response to their perceptions of their firms' opportunity sets. In the context of the internationalization process, the choice set represents the very essence of the research question since the choice set is, by definition, the decision of whether or not the firm should enter international markets. It is the decision maker's prescription for action, for how the firm should behave, and for what choices should be selected concerning international markets.

At times, the internationalization literature has stretched the definition of the choice set beyond the decision to internationalize in order to more fully understand the internationalization process. For example, researchers have assessed the decisions related to entering a particular international market, increasing (or decreasing) the firm's overall commitment to and involvement in international markets, or exiting

from all international enterprises. All of these are logical extensions of the concept of the choice set since the resolution of any of them generates a set of prescriptive choices.

Outcome Set: The outcome set is the set of consequences resulting from decision makers' prescriptive choices about entering and exiting international markets. This set of consequences includes all changes in demand for the firm's product, changes in the firm's ability to supply the product, and changes in decision makers' perceptions about demand and supply. In the specific terms of Chapter 1's suppositions, the outcome set is the set of changes in both the decision maker's perceptions and the actual market conditions, i.e., changes in terms of perceived demand, actual demand, perceived competitive advantages, and actual competitive advantages.

Researchers have suggested other conceptualizations of the outcome set, often in terms of "firm performance." Shaffer and Schmid suggest a broad definition for performance: "The political economy of a community can be perceived as a complex game...Performance refers to all the consequences of the player's choices which are the payoffs to the participants of the game. Performance is the matrix of benefits and costs resulting from playing the game (p. 6)." Alternatively, most of the internationalization literature suggests a much more narrow specification of performance, often defined in terms of profits, return on investments, market share, or percentage of total sales that are from exports. Given this potential range of components for the outcome matrix, this research, because of its focus on

internationalization decisions, limits its specification of the outcome set to include only those components (as noted above) that directly affect the decisions to enter and exit international markets.¹⁵

4.1.2 Decision Making, Negotiating and Learning

Opportunities, choices and outcomes are sets of measurable stock variables. Decision making, transacting and learning are the processes by which these sets of stock variables become incorporated into the flow of the dynamic system by which firms internationalize.

Decision Making: In order to more fully understand the choice set, the latent decision-making process that leads to prescriptions about internationalization needs to be modelled. Glenn Johnson has proposed a general model of prescriptive choice, in which he identifies various components of the decision making process. Though much more general than the specific focus of this research, his work provides a framework on which to build a model of how firms make prescriptive choices about international markets.

By Johnson's definition, prescriptions "are sometimes expressed in the future tense as goals or targets. They are also expressed as actions in the present tense; at times they are stated imperatively as laws, regulations... On still other occasions they are recipes or standard solutions for standard problems. In evaluating past actions,

¹⁵Although the full model of opportunity, choice and outcome sets has been developed within the narrow, specific agenda of understanding the internationalization process, it has the capacity for a broader definition of performance and could readily be applied to a wide range of firm behavior. This point is more fully developed in Chapter 9.

prescriptions are also expressed in the past tense as statements about what ought or ought not to have been done (p. 18)." In other words, prescriptions are the strategies, tactics and lessons learned expressed by the firm's decision maker.

Johnson suggests that a prescription (i.e., a statement of what ought or ought not be done) "can be regarded as a function of value-free [positive] knowledge and knowledge about values and, as such, is a logical consequence of them. The functions...relating value-free positive knowledge and knowledge about values to prescriptions are decision making rules (p.18)." Putting this assertion into functional form, Johnson's model is specified by the equation,

$$\text{prescription} = \text{DR}(\text{positive knowledge, knowledge about values})$$

where DR is a decision-making rule.

Johnson defines value-free positive knowledge as a type of "synthetic knowledge that deals with the characteristics of conditions, situations, or things in the real world," and knowledge about values as "knowledge having to do with the goodness and badness of conditions, situations, and things (p. 17-18)."¹⁶ Decision rules are the means for putting weights on value-free positive knowledge and knowledge about values in order to make decisions. Examples of decision rules are profit

¹⁶Johnson elaborates further about the notion of knowledge-about-values as knowledge having to do with the goodness and badness of conditions, situations, and things: "it is possible (1) to experience the 'real' goodness or badness of such conditions as justice and injustice or of such things as the Salk vaccine for polio or the presence or lack of vitamin B-12 in our diets, and (2) to develop primitive terms on the basis of such experiences to use in describing those goodnesses and badnesses. Goodness and badness, so viewed, are undefinable but experienceable (p. 17)."

maximization, cost minimization, satisfying behavior, standard operating procedures, and rules of thumb.

Applying these insights to the internationalization decision, the choice set is, by definition, a prescription made by the decision maker about forgoing, entering or exiting international markets. The decision maker makes this prescription based on his/her firm's decision rules, given what he/she knows of positive knowledge about the opportunity set (i.e., synthetic measures characterizing demand for the firm's products and the ability of the firm to competitively supply this demand) and of knowledge about values (experiential knowledge about goodness and badness of doing business internationally held by the decision maker).¹⁷ These decision rules state that the decision maker ought to choose the option which meets the requirements of the rule (e.g., the choice that maximizes profits, minimizes costs, meets the criteria of a rule of thumb).

There is one important nuance of Johnson's model of the prescriptive choice process that requires further elaboration. Positive knowledge is defined as synthetic knowledge about the characteristics of "things in the real world." In the case of the proposed internationalization model, examples of these things could include percentage of potential customers in a given country who are aware of the firm's product, or the number of customers in country that have purchased the product in the last 12 months. As noted in Chapter 1, unless assumptions of perfect information are

¹⁷Examples of "experiential knowledge about goodness and badness of doing business in international markets" include the normative, moral dilemma of child labor, bribery, and/or politically oppressive regimes.

imposed on this model, there is an inherent gap or discrepancy between "true reality" and the perceptions held by the decision maker about this reality. This implies that prescriptions are a function of the decision maker's perceptions about the state of the world, not on the "actual" state of the world. This discrepancy is particularly relevant to understanding the outcome set since through market interactions the actual state of the world, not the perceived state of the world, ultimately determines the consequences of the choice set.

Transacting: To more fully understand the outcome set, the latent market process that generates the outcome set needs to be clearly specified. Amazingly, few economists have bothered to actually define what they mean by markets, or to model at the firm-level the actual process by which the choice set is transformed into market outcomes. As Hodgson notes,

The study of market behavior is a major theme, if not the major theme, of economic science as we know it. Furthermore, the proposal that markets should be extended, unfettered and made more competitive is a strident policy recommendation of our times. Remarkably, however, definitions of the market in the economics literature are not easy to find, and analytical discussions of the institutional concepts involved are extremely rare. Mathematical models of market phenomena abound, and there is voluminous literature on the theoretical determinants of market equilibria. Yet, if we ask the elementary question -- 'What is a market?' -- we are given short shrift (p. 172).

Alfred Marshall's *Principles of Economics* provides an historic perspective on what economists have meant by markets. Building on the ideas of Cournot and Jevons, Marshall defines a market in terms of a physical space and a particular time-frame (i.e., short, long, very long). Given these specifications, he states that markets are places "which allow the forces of demand and supply to bring themselves into

equilibrium with one another (Book V, Chapter 1, p. 330)." From the early decades of this century, Clark and Weld provide an historical perspective of agricultural markets by specifying the main processes of the market system. They note, "To get products from growers into the hands of distant users involves three important and related processes, which may be called concentration, equalization, and dispersion (p. 13)." They then describe these three processes in terms of how agricultural products physically move through time and space; no model of the actual processes of exchange or transacting are provided.

Samuels (1992a) provides a summary of the more contemporary (i.e., neo-classical economics) definition of the market:

The conventional view of the market is unquestionably one in which the market functions to allocate resources, distribute income, and determine the magnitude of the level of aggregate income. In this respect it is traditionally conceived as a system or process in which private economic actors participate as demanders and sellers in a multiplicity of subsidiary markets and, whether under competitive or non-competitive conditions, so interact as to produce effective resolutions of the basic economic problems (p. 7).

Scherer, in his text on industrial organization, suggests that markets are specified in terms of buyers, sellers, a defined product, and the degree of substitutability (e.g., cross elasticities of demand and supply) of alternatives for the defined product.

Hodgson, after documenting the dearth of definitions for "the market", provides one of his own, emphasizing a more institutional economics perspective.

Markets, in short, are organized and institutionalized exchange. Stress is placed on those market institutions which help to both regulate and establish a consensus over prices and, more generally, to communicate information regarding products, prices, quantities, potential buyers and potential sellers (p. 174).

Dietrich, elaborating on Hodgson's definition as a backdrop to his treatise on transaction cost economics, defines markets "as involving [1] the exchange of goods and services and the associated property and contractual commitments; [2] communication to inform potential customers that goods or services, with their associated prices, qualities and quantities, are available for sale; [and, 3] informing suppliers that there is a demand for their products (p. 7)."

These assorted definitions provide an overview of the roles, components and participants of markets, but fail to document the actual process by which an exchange is completed. Thurow provides a possible explanation for this. He contends that in all of micro-economics it is assumed that "every market is a price-auction market that clears based on competitive bidding within a framework of supply and demand (p. 4)." In other words, the market process is sufficiently represented by the idea of a public auction where suppliers bring their wares to the auction block, and these wares are then sold to the highest bidder among many bidders. Hirshman, in his text on how firms, organizations and states respond to internal decline, describes in more detail how the price-auction market process supposedly works in a more general context:

The customer who, dissatisfied with the product of one firm, shifts to that of another, uses the market to defend his welfare or to improve his position...This is the sort of mechanism economics thrives on. It is neat--one either exits or one does not; it is impersonal--any face to face confrontation between customer and firm with its imponderable and unpredictable elements is avoided and success and failure of the organization are communicated to it by a set of statistics (p. 15).

After documenting some of the limitations of the price-auction model (in his words, "the exit mechanism"), Hirshman develops a more expansive model of organizational and social change that includes elements of "exit (i.e., market forces), voice (non-market forces) and loyalty." He does not, however, appear to reject the notion that the market process can be represented by the price-auction model.

Coase and those who further developed his ideas concerning the nature of the firm also provide some specification of the mechanisms of the market, focusing particularly on the roles of contracts between firms that are negotiated to exchange resources and on the economics of internalizing exchanges in a vertically coordinated organization. In this line of inquiry, the "market" is juxtaposed to the "firm," and it is argued that the firm's authoritative, hierarchical structure is an alternative to the price-auction model. These ideas, of which Williamson and Winter provide a useful overview, broaden the understanding of potential mechanisms for allocating resources, but only begin to specify the actual processes (e.g., contract negotiations, employer-employee relations).

In his text on property rights and economic performance, Schmid specifies three types of transactions: (1) bargained, (2) administrative and (3) status and grant. The first represent market transactions, the latter two are non-market transactions (and thus of less interest to this discussion). In defining bargained transactions, Schmid provides in an indirect manner a description of the market process:

In a bargained exchange system, rights are transferable upon mutual consent of the parties. The parties involved are considered legal equals with respect to the given transactions. Each party is acknowledged to have certain rights that are antecedent to the transaction and that imply

a degree of mutual consent. Each party has an opportunity set with some content (not necessarily equal), and each is free within that limit to join or abstain from further transactions. Each party may deny access to another party who may have need but does not own the resource in question--that is, there is mutual coercion. Through a process of negotiation, the parties agree to transfer something they own in exchange for what the other owns. Thus, a bargained transaction implicitly involves both *coercion and consent* (p. 12; italics added).

Schmid's suggestion that the market process is a process of negotiated transactions is a broader notion than micro-economic's price-auction process of competitive bidding, sale to the highest bidder. Bidding is a form of settling a transaction, but the general concept of transactions includes other means of bargaining, negotiating, exchanging, allocating, communicating, and equilibrating by way of the market (e.g., the Dutch flower auction, forward contracting, counter-trading barter). Schmid's view is also a broader specification of the market process than that of Coase, Williamson and Winter since Schmid acknowledges the inherent coercion underlying all market transactions.

Schmid's views suggest that a *market outcome* (in his words, a bargained transaction) can be regarded as *a function of coercive power and power from consent*.¹⁸ Coercive power is that latent distribution of power that is *antecedent* to any negotiations--what micro-economists typically accept as the a priori conditions of wealth and resource distribution. It is the pre-determined relative market power that exists between to the two principal parties of the transaction. "A" is poor and

¹⁸Schmid defines power as "the ability to implement one's interests when they conflict with those of others," and that power can be "described (measured) in terms of the ability [to make decisions] or degree of participation in decisions (p. 9)."

powerless; "B" is rich and powerful. A's coerced acceptance of these conditions is antecedent to any bargained transaction that A and B may complete in the market. Power by consent is the willing transfer agreed upon between A and B, given the initial distribution of wealth and resources. The functions that relate market outcomes to coercive power and power by consent are transaction rules. Transaction rules specify the relative influence of both the coercive power held by each of the transacting parties and the power established through mutual consent. One possible example of a transaction rule is sell to the highest bidder in a price-auction market. When this is the operative transaction rule, an example of coercive power would be the tacit acceptance of the distribution (whether equal or not) of available wealth across all bidders, while an example of mutual consent would be the willing exchange between the seller and the highest bidder.

In functional form, this transaction process is specified by the equation:

$$\text{market outcome} = \text{TR}(\text{coercive power, power by consent})$$

where TR is a transaction rule.

In the specific context of the internationalization model of this research, the market process is the means by which the choice to enter international markets is transformed into the firm's current outcome set (where the outcome set is defined as the changes in demand, and changes in the firm's ability to competitively supply this demand). This transformation is a result of a transacting process that orchestrates all of the necessary negotiations and communications involved in both the implementation of the decision to internationalize, and the reactions of other market participants to

this entry. And, this transaction process is specified in terms of coercive power (e.g., the initial distribution of resources, the rules and property rights governing international transactions) and power by consent (e.g., two parties signing a contract).

Learning: The third process relevant to the internationalization of the firm is the learning that transpires as decision makers "try to make sense" of market outcomes. Market outcomes change the physical make-up of the firm's opportunity set, but in order for these changes to alter firm behavior (i.e., the choices of decision makers), these changes have to be perceived and internalized (i.e., learned). The vast body of literature on how individuals and organizations learn is beyond the scope of this dissertation. There is, however, an operative model of learning that is common to both the general field of agricultural economics and the specific subject area of internationalization. The innovation-adoption model is a widely accepted model of how firms adopt and incorporate innovations over time. The innovation-adoption model is, for all practical purposes, a model of how the firm learns in a dynamic environment.

As was noted in Chapter 2, the innovation-adoption model suggests that firms internationalize in incremental stages as they gradually increase their familiarity with international markets. This process begins well before the actual decision to enter the international market, while the firm works through periods of awareness, interest, intentions and ultimately, action.

In terms of the internationalization model represented in Figure 4.1, the innovation-adoption model is a way of conceptualizing the process by which changes

in firm-specific demand in international markets, competitive advantages in transaction costs, and competitive advantages in transformation costs are perceived and understood by the firm's decision maker. In other words, the innovation-adoption model represents the process that perpetuates the dynamic relationship between the outcomes of the current market period to the perceived opportunity sets of future periods. In this way, learning can be thought of as the mechanism that closes the loop of the dynamic system. Thus, the innovation-adoption model provides a means of understanding how decision makers learn from their past decisions (and the subsequent outcomes of those decisions).

The learning process, as captured by the innovation-adoption model, can be represented in a functional form. Perceived opportunities represent what has been learned from the outcomes of past market periods, and are modelled as the dependent variable. The independent variables are the decision maker's awareness of, interests in and intentions for an "adopted innovation" (i.e., choice set) given past market outcomes. These independent variables are related to the dependent variable, perceived opportunities, by a set of adoption rules. Adoption rules specify the means for weighing and assessing information about past outcomes. Adoption rules set bounds on what information is "relevant" and hence on what is learned about a particular outcome, filtering available information and giving priority to a limited amount of all that could be known about the outcome. Examples of adoption rules are measures of whether or not the innovation contributes to cost savings, facilitates

labor substitution, or enhances demand. In functional form, the process is specified by the equation:

$$\text{perceived opportunities} = \text{AR}(\text{awareness, interests, intentions})$$

where AR is an adoption rule.

In summarizing Section 4.1, a complete flow model of the internationalization process was presented as centering on three sets of stock variables and three flow processes. The sets of stock variables were the opportunity, choice and outcome sets, and the flow processes were decision making, transacting and learning. Even though these constructs have a broad range of applicability, the primary focus of this section has been to develop the model in the context of firms making decisions about international marketing. The model suggests that, given an opportunity set, a decision maker determines a set of prescriptive choices, i.e., a choice set, about forgoing, entering and/or exiting international markets. These choices are subject to market forces as the firm transacts in the market, yielding a set of outcomes. Through a learning process the outcome set is incorporated into a new and updated opportunity set, bringing the overall decision-making-transacting-learning process full circle.

4.2 The Applicability of the Proposed Internationalization Model

For the proposed model to be useful in resolving the dissertation's central research question, the model must address two general concerns: its capacity to describe, explain and predict relative to the models and empirical findings reviewed in

Chapters 2 and 3, and its appropriateness for addressing the research question, given its general parameters and base-line assumptions. The following sections address these two concerns. First, the proposed model is compared to other models of the internationalization process and then to past empirical work on how firms internationalize. Second, specific details of the model's parameters (e.g., boundary assumptions, assertions about causation, necessary and sufficient conditions) are discussed.

4.2.1 Links to the Internationalization Literature

Most, if not all, of the published literature on the internationalization process can be subsumed under the flow model proposed in Section 4.1. Although numerous references to the literature reviews in Chapters 2 and 3 already have been made in this chapter, the following provides some order and structure to the assertion that most of the prior research on the subject fits neatly into the scope of the proposed model.

Internationalization Models: As noted in Chapter 2, there are several general approaches to modeling the internationalization process. These include theories on trade and transaction costs, and models of foreign direct investment, stages of internationalization, and innovation-adoption.

Contemporary trade theory is built on assumptions about immobility of factors of production and differences in consumer preferences. The former affects a firm's ability to supply product to international markets; the latter determines international demand. In relation to the proposed model, trade models focus almost entirely on the

determinants of the firm's opportunity set, whereas the proposed model recognizes that the internationalization process is more complex than just the opportunities facing a decision maker. In this way, trade theory is readily subsumed into the proposed model, with the proposed model offering a more comprehensive description of the entire internationalization process.

Transaction cost theory focuses on the boundaries separating the firm and the market, and on the firm's need for control over transactions and their costs. When applied to the analysis of the decision to internationalize, transaction cost theory has been used by researchers to explain the choice of market entry mode (e.g., direct investment, exporting, or joint venture) and to explain a given firm's competitive advantage in the market. In relation to the proposed model, transaction cost theory has a more pivotal role since competitive advantages in transaction costs are modeled as one of the principal driving forces of the internationalization process. With perceptions about transaction costs as one of the determinants of the decision to internationalize, an accepted model (in this case, a model based on transaction cost theory) is readily incorporated into the more comprehensive flow model of the internationalization process proposed in Figure 4.1.

Dunning's foreign direct investment model focuses exclusively on a firm's decision to supply demand with local or foreign-based production. The three driving forces behind Dunning's model are ownership, locational, and internalization advantages. Using the terminology of Section 4.1's proposed model, Dunning specified the choice set as the yes/no decision to invest in foreign-based production,

and the opportunity set in terms of three sources of competitive advantage. Although Dunning's recent renditions of his model have incorporated ideas about the negotiated transactions (e.g., network analysis), learning, and the dynamic relationship of outcomes with on-going decision making, his model does not fully specify the entire process by which firms choose to invest in foreign-based production facilities (e.g., demand is antecedent to the model, the decision making, transacting and learning processes are unspecified). In the end, the proposed model and Dunning's foreign direct investment model cannot be directly compared because the models address different research questions. Yet, the proposed model can be viewed as an extension and adaptation of the general relationships originally proposed by Dunning.

Stages models suggest that the firm's acquisition of knowledge and commitment of resources drive the internationalization process. Commitment decisions and current market activities are based on the cumulative reserve of experiential market knowledge attained through past commitments to international markets. Relative to the proposed model, stages models provide a more detailed representation of the choice set (detailing incremental decisions to internationalize), and parallel the proposed model's causal cycles of choices, outcomes, and learning, which lead (cycle) to a new set of choices, outcomes and more learning. However, stages models do not specify the specific nature of market information (e.g., the necessary and sufficient information to sustain the dynamic system), or the actual decision making, market transacting or learning processes. Further, stages models propose a very specific, incremental progression through a series of causal cycles.

Relative to the proposed model, firms moving from stage to stage in the stages models are simply firms cycling through the decision-making-transacting-learning process and finding that internationalization is a worthy endeavor for the firm. Because of this positive assessment of the outcome set, these firms continue to develop their internationalization efforts. However, the proposed model permits a much broader range of possible outcomes, perceived outcomes, and prescriptive choices given these outcomes, and hence, it is a more comprehensive model of the overall internationalization process.

Innovation-adoption models suggest that entry into international markets is an innovation to the firm. Thus, the internationalization process is fundamentally about how firms learn and adapt to the changing opportunities that result from the gradual, incremental adoption of a new innovation. Like stages models, innovation-adoption models provide a more detailed picture of the choice set than does the proposed model. But innovation-adoption models focus almost exclusively on how firms learn, failing to capture the more robust sequence of events represented in the proposed model. Like transaction cost models, the innovation-adoption models represent only a segment of the overall internationalization process.

Empirical Studies: The bulk of the empirical studies that have examined the internationalization process have been pre-occupied with specifying and assessing the firm's opportunity set. Some research also focused on issues related to decision making, negotiating transactions, and/or specifying and assessing outcomes. No

empirical studies are known to have examined simultaneously all of the components of the proposed model.

The opportunity set, as defined by the proposed model, consists of perceived demand and the firm's ability to supply this demand. Past research on perceived demand has been rather narrowly defined, focusing on the role of the unsolicited order from abroad as a catalyst or stimulus of the internationalization process. Alternatively, researchers have comprehensively proposed and reviewed an extensive list of potential determinants of the firm's ability to supply product to meet this demand. As was noted in the literature reviews in the earlier chapters, researchers have specified these determinants in terms of three categories: the idiosyncracies of the decision maker, the characteristics of the firm, and the environment external to the firm.

Researchers have also examined and empirically studied the decision making process that leads to the internationalization of the firm. The two main lines of inquiry have examined either the role of risk and uncertainty in the decision process, and/or the role of the decision maker's attitudes and perceptions in the decision to internationalize. In relation to the proposed model, these studies help identify sets of positivistic knowledge and knowledge about values that are relevant to the internationalization process.

Another set of studies have examined mode of entry decisions of firms entering international markets. Relative to the proposed model, these studies are a means of specifying a more detailed choice set. For example, in the proposed

application of Section 4.1's model, the choice set is simply the yes/no decision to internationalize. In entry-mode studies, the choice set is expanded to a decision across several alternative means for entering international markets. Also, empirical studies on entry modes shed some light on the transaction process relevant to international markets. The selection of an entry mode implies the acceptance of a particular transaction rule (e.g., exporting can imply a price-auction model of transacting; a joint venture implies a different model of transacting).

A final set of relevant empirical studies has focused on "firm performance" in international markets. These studies typically have been based on the strategy-structure-performance paradigm from management theory, and have defined and measured performance in financial and/or accounting terms. Performance, as defined in these studies, is a more narrow concept than the proposed model's definition of an outcome set. However, as a first step approximation of the outcome set, these performance studies provide the groundwork for empirically measuring the outcomes of the decision to internationalize.

Summary: The scope of the proposed model provides a much broader definition of the internationalization process, and readily meshes within it most of the central ideas proposed in other internationalization models and/or reported in empirical studies of international firms. Consequently, the proposed model provides a comprehensive, coherent model of the process by which firms consider decisions about making their business scope more (or less) international.

4.2.2 Model Specifications

As noted above, the proposed model's applicability to the dissertation's central research question--what are the underlying driving forces supporting decisions by smaller agri-food firms about entering and/or exiting international markets--is, in part, dependent upon the model's general parameters and base-line assumptions. To address the issue of applicability and to more fully develop the proposed model, its boundary assumptions, causal statements, and the necessary and sufficient conditions for a firm to internationalize are now explicitly detailed.

Boundary Assumptions: Boundary assumptions establish the model's range of applicability in terms of (1) the unit of analysis, (2) assumptions about behavior, and (3) time and space. The base unit of analysis for the proposed model is the choice set, initially summarized as the yes/no decision to internationalize.¹⁹ However, given the comprehensive nature of the proposed model, ulterior units of analysis are layered into any empirical application of the proposed model. To understand the decision, one must understand the decision making process (a second unit of analysis). To understand the decision making process, one must understand the decision maker (a third unit of analysis) and his/her perceptions (a fourth unit of analysis). To understand the perceptions of the decision maker, one must understand the firm's opportunity set (a fifth unit of analysis). And to understand the opportunity set, one must understand the causal, cyclic relationships of the opportunity set to the market,

¹⁹The proposed model readily adapts to include a more expansive choice set. For example, the incremental choices implied in the stages or innovation-adoption models can easily become the operative definition of the choice set.

firm-level market outcomes, and any learning within the firm that transpires over time (implying that the cyclic process itself can be a unit of analysis, as can its many components).

By design, the proposed model is relatively open to assumptions about the behavior of the decision maker, firm and market. In the proposed model, the decision making process is a function of decision making rules. As the model is empirically applied, researchers are free to impose whatever decision making rules they believe most effectively represent individual and firm behavior (e.g., profit maximization, satisficing, rules of thumb). Similarly, the proposed model's conceptualization of market behavior as a process governed by a set of transaction rules permits a range of assumptions about the functional form of market behavior, whether it is assumed to be a price-auction, contractual-based agreements or something else.

The proposed model is also relatively unbounded in terms of time and space. In time, the model continuously cycles. Consequently, the model can easily be used to represent the firm well before the actual decision to internationalize is made and implemented. At first, as each time-market period cycles, the choice is made not to enter international markets. At some point, the choice changes and the decision is now to enter these markets. Then, as each time-market period cycles, the choice is to either stay or exit. If at some point the choice is to exit, then subsequent time-market periods have the choice of re-entering or remaining out of international markets. Any of these dichotomous choices can be represented by the model. In space, the model is

not specified in terms of a particular geographic location, industry, or type or size of firm. The intent is that the model be generalized across a wide range of spatial parameters.

Causality: Given that for the purposes of this research the base unit of analysis is the yes/no decision to internationalize, the proposed model, for it to be applicable, must specify the causal relationships that determine whether the decision maker chooses yes or no. What has been implied above is stated explicitly here: perceptions about the opportunity set determine the choices made. Specifically, perceptions about demand for the firm's products and the firm's ability to competitively supply this demand drive the decision to internationalize. If the decision maker perceives that his/her firm can competitively supply a known (and perceived) international demand, then the firm will choose to internationalize. This decision sets into motion a series of causal events where the choice to internationalize, once implemented, generates a set of market outcomes which alter the firm's opportunity set. As firms learn about these outcomes and their effects, perceptions about the opportunity set are updated. A new choice set is then based on these updated perceptions, thus sustaining the causal cycle.

Necessary and Sufficient Conditions: The proposed model asserts that perceptions about demand and the firm's ability to supply this demand determine the internationalization decision. To more fully explain this causal relationship, the necessary and sufficient conditions that precipitate the decision to internationalize are now specified.

The empirical work to date suggests that perceived demand is a necessary but not sufficient condition for internationalization to occur. Considerable evidence has been compiled that suggests that an unsolicited order from an international customer is a key catalyst in the decision to internationalize. Further, some studies conclude that the internationalization decision is often entered into (particularly by smaller firms) without much planning or advanced knowledge about demand factors. The decision has been reported to be as simple as "There's a billion people in China; some of them must want our product." But in that simple statement there is an implied belief that at least a latent demand for the firm's product exists. However, there is evidence that many non-exporters have also received unsolicited orders from abroad. These firms have chosen not to act on the unsolicited order, implying that perceived demand is a necessary but not a sufficient condition to internationalize the firm.

The proposed model identifies two dimensions to a decision maker's perceptions about the firm's ability to competitively supply demand--competitive advantages in transformation costs and competitive advantages in transaction costs. Although there is evidence in the literature that indicates perceived relative advantages are a necessary condition for internationalization to occur, there is little empirical support to date that has specified these relative advantages in the terms of the proposed model. There is even less empirical support for the notion that relative advantages, however specified, are sufficient by themselves to explain the internationalization decision. Given this, the proposed model assumes that

competitive advantages, in and of themselves, are a necessary but not sufficient condition for internationalization to occur.

The proposed model suggests that the necessary and sufficient conditions for internationalization include some combination of both perceived demand and perceived competitive advantages in the market. However, the model intentionally does not specify the exact nature of the perceived competitive advantages. It is a matter of empirical study to determine whether both competitive advantages in transformation and transaction costs are necessary, or if only one form of competitive advantage is sufficient to initiate the internationalization decision. Further, even if a firm faces a known demand in an international market and the firm believes it has competitive advantages over its rivals in both transformation and transaction costs, there is not yet enough empirical evidence to conclude that the firm will definitely enter the market. Such a conclusion can only be drawn when there are assumptions made about the operative decision rules employed by the decision maker. Decision rules guide the decision making process and specify the motivational forces underlying the choices made. Hence, a decision maker's motivation, stimulated by perceptions that internationalization meets the criteria of the operative decision rules (e.g., profit maximization, rules of thumb, altruism) is proposed as the model's final necessary condition for internationalization to occur. But this too is a matter of empirical study, confirmation or refutation.

4.3 Evaluating the Proposed Model

The previous sections of this chapter have fully developed the proposed model, specified its parameters and linked it to the published literature. However, for the proposed model to be useful as a guide for empirical data collection and analysis, the model must be both well grounded in theory and easily made operational in practice. Two basic questions help to evaluate the model for these traits: (a) how well does the model expound, rather than describe, the internationalization process and (b) how well does the model link the conceptual (i.e., abstract theory) to the observable (i.e., empirical study)?

4.3.1 Does the Model Explain?

One way to assess the proposed model is to determine to what degree the model expounds rather than describes the internationalization process. An explanation of the internationalization process establishes causality on theoretic grounds. A description of the internationalization process simply documents observations about correlated and causal relationships. Thus, theory is what distinguishes explanation from description, and is what provides a model with explanatory power.

As was implied above, the proposed model is built on fundamental assumptions from economic theory that relate demand and supply by way of the market. The proposed set of causal relationships that initiate and sustain the internationalization process are perceived demand and competitive advantages in supplying this demand--where competitive advantages are derived from either the production function (transformation cost advantages) and/or the firm's governance

structure (transaction cost advantages). Economic theory asserts that firms, given an assumed decision rule (e.g., profit maximization), will seek to supply market demand, although the firm's ability to do this is constrained by its production function and governance structure. Economic theory also asserts that suppliers' discovery of customers, customers' discovery of suppliers, and price discovery (and all other subsidiary terms of the transaction) take place in the market, given an assumed set of transaction rules (e.g., price-auction market). All of these economic relationships are built into the proposed model, and thus, by way of economic theory, the proposed model explains the internationalization process.

4.3.2 Is the Model Workable?

A second way of evaluating the proposed model is to review the proposed linkages between the conceptual and operational variables of the model. All theories and models require a "leap of faith" that links the model's theoretic base to the observable, measurable, and tangible. The conceptual "ease" with which a model's proposed constructs make this link is a relative measure of the model's empirical usefulness. Similarly, the plausibility of these links can substantiate the model's claim that it explains the internationalization process.

At the conceptual level, the proposed model establishes three sets of stock variables, and three dynamic processes. For the model to be employed in an empirical study, proxies for each of the stock variables (i.e., the opportunity, choice and outcome sets) must be identified. Similarly, the three dynamic processes (i.e.,

decision making, transacting and learning) must also be made operational by identifying measurable proxies of the principal components of each process.

The proposed model has already provided some guidance in how to empirically capture the intent of the theoretic model. For example, the opportunity set is specified as the decision maker's perceptions of firm-specific demand in international markets and the firm's competitive advantages in transforming and transacting. Although these specifications are not yet measurable, they do give considerable guidance in how empirical lines of inquiry should be crafted. In this example, interview questions for decision makers should focus on the individual's perceptions about market demand for the firm's products, distinguishing competitive features of the product, and specific contractual agreements sought by the firm.

The model provides similar "first-step approximations" for empirically specifying the other components of the model. The principal components of the decision making process are positivistic knowledge, knowledge about values and operative decision rules. The choice set can be reduced to the simple yes/no decision to internationalize, or can be extended to include a range of incremental choices towards internationalization. The principal components of the transacting process are the distribution of power through coercion and consent, and the operative transacting rules.²⁰ The outcome set is measured temporally as changes in firm-specific demand in international markets and in the firm's competitive advantages in these markets.

²⁰And, as Schmid suggests, power can be measured in terms of a given agent's ability to make decisions or the degree of participation in the decision making process.

The learning process is measured temporally by monitoring changes in the decision maker's awareness of, interests in, and intentions for acting on their perceptions about demand and competitive advantages in supplying this demand.

These examples suggest that the model, as proposed, can readily be made operational, and thus has potential as a guide for the empirical study of the internationalization process. Further, falsifiable hypotheses about the model's causal relationships, and necessary and sufficient conditions for internationalization to occur can be generated and empirically tested. These conclusions, combined with the observations noted above about the model's grounding in economic theory, the model's applicability to the research question given its general specifications, and the model's general approach of extending and building onto the cumulative knowledge found in the internationalization literature, indicate that the model is well suited for addressing practical research questions such as why are some, but not all, of Michigan's smaller agri-food firms internationalizing their scope of operations, or more generally, what drives the internationalization process.

4.4 A Comprehensive Model of the Internationalization Process, Summarized

The model, as proposed in this chapter, can be summarized as follows. To understand the internationalization process, one must first understand firm behavior as an iterative, dynamic cycle of stock variables and flow processes. Relevant stock variables are embodied in three sets: perceived opportunities, choices and market outcomes. The three critical processes are decision making, transacting, and learning.

Given this generalizable framework of firm behavior, the underlying forces that drive the internationalization process are perceived demand in international markets, competitive advantages over rivals (domestic or foreign) in transacting in international markets and competitive advantages over rivals (domestic or foreign) in transforming products for international markets. A set of operative decision rules (e.g., profit maximization) complete the model of the internationalization process by specifying what motivates and sustains choices made about international markets.

CHAPTER 5 EMPIRICAL METHODS

Chapter 5 provides a general overview of the empirical methods that will be documented in subsequent chapters. The proposed model, as developed in Chapter 4, is a comprehensive framework for addressing issues concerned with firm behavior. The objective of developing the framework is to use it for addressing the central research question of this dissertation--what are the underlying driving forces motivating and sustaining the internationalization decisions of Michigan's smaller agri-food firms. Transforming these broadly focused abstractions (i.e., the conceptual model and the research question) into specific, concrete research objectives requires a narrowing of the research scope, particularly in light of the time and resource constraints inherent in a dissertation research program. The objective of this chapter is to document how and in what ways the research scope was narrowed. As a consequence of focusing the research scope, the model in its entirety only receives a cursory level of analysis. Detailed data collection and analysis, as described in Chapters 6 through 8, are limited to select portions of the proposed model. Section 5.1 documents how portions of the model were selected for in-depth research. Section 5.2 documents how different approaches to data collection and analysis were selected to test the model and address the central research question.

5.1 Focus of the Research

Before the objectives of and approaches to the data collection and analysis phase of this research could be specified, priorities had to be established concerning each of the following: the units of analysis to be considered, the level of aggregation at which the analysis would be approached, and the limits on the scope of research to be attempted. In this way, the overall focus of the research was clarified, and the data collection and analysis phase was made more manageable.

5.1.1 Unit of Analysis

As noted in Chapter 4, the base unit of analysis proposed for this research is the decision maker's yes/no decision to internationalize. Other potential units of analysis are the decision making process, the decision maker (e.g., background, training), the decision maker's perceptions and motivations, the firm (e.g., its strategies and structure), the firm's opportunity set, the market structure, firm performance, and/or the overall cyclic process that relates all of these factors together. Given the inter-relatedness of these factors, it is impossible to limit research to only one unit of analysis, but equally difficult to "do it all." One solution is to select a single unit of analysis, in this case the yes/no decision to internationalize, and then limit evaluation of other factors to only how they directly relate to the chosen unit. For example, if the unit of analysis is the decision to internationalize, then an analysis of market structure is limited to assessing how it influences the decision to internationalize. Similarly, firm performance would be analyzed within the context of how it affects the decision to internationalize.

The yes/no decision to internationalize also needs further specification. As discussed in Chapter 1, the literature has typically reduced this question to whether or not the firm *exports* its products and/or services, even though the definition of internationalization can be much more broadly specified. For purposes of narrowing the research focus, this research concurs with the literature and uses exporting as the dimension of internationalization which defines and delimits what is meant by the term. However, the research reported in subsequent chapters incorporates, as it does with the more general issue of specifying the unit of analysis, broader specifications of what it means to internationalize by relating the influences of other dimensions of internationalization to the decision to export (e.g., by examining how the international marketing practices of customers may influence a company's decisions about exporting its own products--companies that export have suppliers that become exporters).

Given these considerations, the research established the following base-line unit of analysis to guide the overall line of inquiry: the yes/no decision to export products.

5.1.2 De-constructing the Proposed Model

In addition to specifying the base-line unit of analysis, decisions must be made concerning the "tier" or general level of aggregation at which the analysis is focused. At the most aggregate level is an analysis of the yes/no decision to export in terms of the complete, dynamic model, examining the decision within the broad context of the overall iterative process. For this type of analysis, data are collected on all six of the

general components of the model (i.e., on the opportunity, choice and outcome sets, and the decision-making, transacting and learning processes). Alternatively, a more dis-aggregated level of analysis identifies one of these components as the primary focus of the research, with possible secondary emphasis on the other five components and/or on an aggregate analysis of the complete model. A third option is to select one or more sub-components of the model, targeting the research on an even more dis-aggregated level, e.g., how decision, transaction and/or adoption rules influence the decision to internationalize.

This research balances the ability to address the central research question against the time and resource constraints inherent in a dissertation research program. Priority is given to being able to analyze selected aspects of firm behavior in a detailed manner without losing the comprehensive, systemic explanatory power of the complete model. Given that the model readily de-composes into six general components, the research targets a select number of these components for comprehensive data collection and analysis, and limits its analysis of the remaining components to only how they directly relate to the central research question.

Since the pre-determined base unit of analysis is the yes/no decision to internationalize, the logical choices for components of the model which should receive detailed attention are the choice set and the decision making process. As the input into the decision making process, the opportunity set will also be examined, but with less detail and only in terms of the proposed three driving forces (perceived demand, competitive advantages in transacting and competitive advantages in transforming).

Less attention will be given to the transacting and learning processes, and firm performance in terms of the outcome set, relegating most aspects of these components of the model to the status of "suggestions for future research."

5.1.3 Other Issues Related to the Scope of Research

Since the data sets to be collect and the methods for collecting them are issues that depend on a clear specification of the target population, the scope of research is also delimited by its intended focus in terms of targeted industries, market segments, and firm profiles. Although these issues are described at length in subsequent chapters, a brief discussion is provided here for introductory purposes.

The central research question asks about the internationalization decisions of *Michigan's smaller agri-food firms*. This question was crafted within the context of a large-scale research initiative investigating the status and potential of Michigan's agricultural sector. Given the interests of the funding agency, the target population is limited to Michigan-based firms and/or agricultural industries important to Michigan. The terms "smaller" and "agri-food" are defined in full later, but in general, smaller firms are targeted because most larger firms have already internationalized to such a degree that it would be difficult to recreate the processes that led to their current degree of internationalization. And, the term "agri-food" is used to indicate the desire to understand the internationalization process beyond the context of a single industry. The belief is that a broader coverage of related agricultural industries is preferred to a research scope that narrowly targets a single industry, e.g., wineries, or meat packers, or fruit and vegetable processors.

5.2 Data Collection and Analysis

This section documents how different approaches to data collection and analysis were selected to test the proposed model and address the central research question. An objective of this empirical research is to combine narrowly-focused case studies with broadly targeted surveying. As detailed in subsequent chapters, both methods to data collection provide useful, and to some degree, mutually exclusive sets of data. The following section introduces these two data collection methods and describes how the schedule for the empirical research was sequenced.

5.2.1 Data Collection Methods

Two widely-accepted approaches to data collection in the social sciences are case studies and surveying. Other approaches include experiments, archival analyses, and histories. As discussed in Chapters 6 and 7, case studies and surveying are well suited for addressing the data needs of this research--primarily because the central research question focuses on the "why" and "how" of internationalization, and case studies and surveys favor these types of inquiries.

A case-study approach typically involves a small number of purposely selected interviewees (i.e., one to 10 cases). Interviewees/cases are selected to match specific characteristics and conditions that have been identified a priori and are believed to be relevant for addressing the research question. These issues are then fully explored during the empirical portion of the case study, using detailed interviews and reviews of supporting documentation (e.g., a company's record books and annual reports). Case study findings are generally much more detailed profiles of interviewees relative

to the findings of other empirical approaches. Conclusions drawn from case study findings can be generalized with inductive reasoning and non-statistical inferences. Chapter 6 describes in detail this method of data collection and analysis, how it was applied to this research and the conclusions that were drawn.

Surveys involve a much larger number of targeted respondents, and typically do not involve the personal, in-depth contact with interviewees inherent in case study methods. Rather, surveys usually involve questioning respondents by telephone or in writing with a mailed questionnaire. Also, survey design nearly always attempts to identify a "representative" sample of respondents, drawn from specifically defined target and sample populations. Assuming that the surveyed sample is representative, conclusions from surveys can be generalized using deductive reasoning and statistical inferences derived from quantitative analysis of survey data. Chapters 7 and 8 describe in detail this method for data collection and analysis, how it was applied to this research, and the conclusions drawn.

5.2.2 Sequencing the Empirical Research

The general research approach used a series of case studies for an exploratory inquiry into managerial perceptions about demand and competitive advantages, and how these perceptions influence decisions about international markets. This was followed by a large-scale mail survey of a representative cross-section of Michigan's agri-food sector. The case studies were intended to be a "first-pass" appraisal of the agri-food industry's prevailing attitudes towards and experiences with international markets. The cases were not designed to be fully developed, multi-layered profiles of

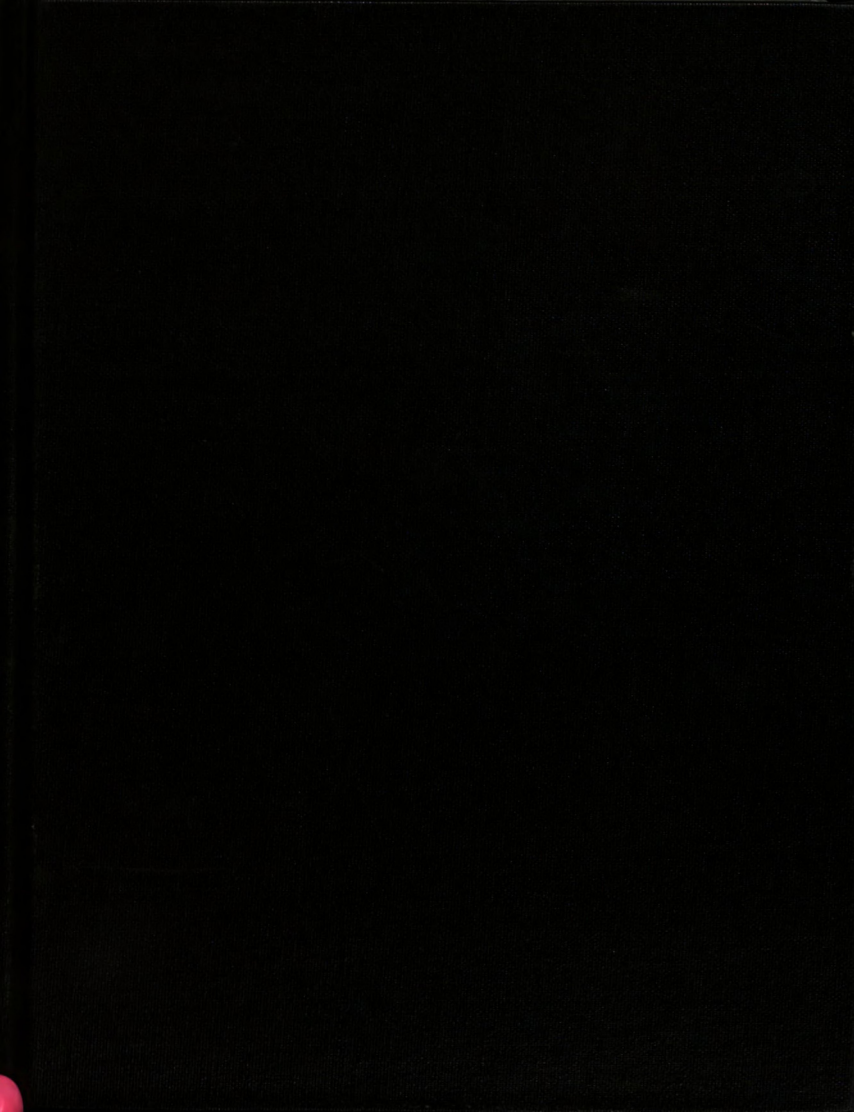
the selected firms. Instead, they were limited to on-site interviews (lasting one to three hours) of principal decision makers at smaller agri-food firms throughout the state. General impressions and suppositions from these interviews were then used to help design the comprehensive mail survey.

The three chapters that follow, i.e., Chapters 6 through 8, present a detailed, sequential development of the empirical research that was conducted over an 10-month period from June, 1995 to March, 1996. As will be described in the subsequent chapters, the research involved eight case studies and a mail survey of 242 firms. Findings from these research efforts are summarized at the conclusions of each of the chapters and then synthesized into a concise summary presentation in Chapter 9.

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**DECISIONS ABOUT EXPORTING: THE CASE OF MICHIGAN'S SMALLER
AGRIBUSINESS AND FOOD INDUSTRY FIRMS**

VOLUME II

By

James Arthur Sterns

A DISSERTATION

**Submitted to
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CHAPTER 6 DATA COLLECTION & ANALYSIS – CASE STUDIES

Chapter 6 documents findings from a set of case studies conducted during the summer of 1995. These case studies marked the beginning of an empirical study of firms, their decisions about international markets and how decision makers' perceptions about demand and competitive advantages influence the internationalization process. The case studies were intended to be the basis for a general, "first-pass" appraisal of Michigan's agri-food industry's prevailing attitudes towards international markets. Consequently, the case studies were not designed to be fully developed, multi-layered profiles of selected firms. Rather, the case studies were limited to on-site, in-depth (i.e., two to three hours in duration) interviews of a firm's principal decision maker. General impressions and suppositions from these interviews were then used to help design a comprehensive mail survey, which will be discussed in full in subsequent chapters.

This chapter begins with a brief review of the case study approach, followed by a description of how the case studies were designed and implemented for this research. The chapter continues with a series of comparisons across cases and a synthesis of the case study findings in terms of the model proposed in Chapter 4.

The chapter ends with a summary of the general themes that arose from the case study analysis.

6.1 Review of Case Study Theory

Case study research, as a means of collecting data and building theory, has a prescribed set of objectives and methodologies that have been developed and tested in a wide range of scholarly and pragmatic situations. By specifying these approaches, researchers and practitioners have established parameters for interpreting case study results and their degree of generalization. Yin provides a comprehensive treatise on case study design and methods that summarizes the approach. The following review borrows heavily from his work.

6.1.1 Objectives of Case Studies

Yin proposes that case studies are one of five general research strategies--the others being experiments, surveys, archival analyses and histories. The appropriateness of a given strategy depends upon the research question being asked, the need for control over contextual variables, and the time-frame encompassing relevant events. Case studies are the most appropriate strategy when the research question focuses on addressing "how" and "why" questions, when controlling the contextual variables is not an option, and when the relevant time-frame is the present. Yin develops a technical definition of case studies that more clearly specifies when case studies act as an all-encompassing, comprehensive research strategy:

A case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries

between phenomenon and context are not clearly evident...The case study inquiry copes with the technically distinctive situation in which there will be many more variables of interest than data points, and as one result relies on multiple sources of evidence, with data needing to converge in a triangulating fashion, and as another result benefits from the prior development of theoretical propositions to guide data collection and analysis (p. 13).

In other words, case studies provide a formal, theory-driven and fully specified means for empirically investigating multi-dimensional phenomenon, especially when the phenomenon appears to be deeply entwined in a highly interdependent set of circumstances.

6.1.2 Generalizing from Case Studies

Mary Kennedy (1979) highlights two important observations about the nature of what we know. First, the application of knowledge is situational since sometimes "knowledge of the general case is used to explain or predict a specific case...[but other times] knowledge of the specific case may be generalized to great segments of the population (p. 661)." Second, when making generalized inferences, there are two "spans" to be crossed. "One, a statistical span, connects the sample to a population just like the sample. The second span connects to a population believed or assumed to be sufficiently similar to the study sample that findings apply there as well (p. 665)." The latter halves of these two observations represent the situations and type of inferences that are often associated with case studies--inductive reasoning and non-statistical inferences about general populations. Both Kennedy and Yin articulate conditions under which they believe case study findings are generalizable, and offer

suggestions for when these generalizations can be based on inductive reasoning and non-statistical inferences.

Kennedy's perspective is narrowly focused on the application of case study research to the field of evaluation (and related methodologies). From Kennedy's perspective, the validity of non-statistical inferences can be enhanced when three criteria are met: there are (1) a wide range of attributes across the sample case, (2) many common attributes between the sample and the general population of interest, and (3) few unique attributes within the sample. The first criterion implies that even a small number of cases can represent a wide range of attributes as long as they are selected with this intent. The second criterion requires that the researcher have some sense of the general attributes of the population of interest prior to selecting specific cases. The third criterion recognizes that the degree of unique attributes in a sample and the validity of generalizations are inversely related. Kennedy adds a caveat to the application of these criteria--attributes that are identified must be relevant. In other words, identified attributes should reflect the hypothesized relationships between dependent and independent variables and/or between treatments and intended consequences.

Yin suggests a very different way of understanding how case study results can be generalized. He abandons any attempts to justify case studies in terms of a sample being "representative" of a general population. He contends that "case studies, like experiments, are generalizable to theoretical propositions and not to populations or universes. In this sense, the case study, like the experiment, does not represent a

'sample,' and the investigator's goal is to expand and generalize theories (analytic generalization) and not to enumerate frequencies (statistical generalization) (p. 10)."

Yin's "analytic generalization" implies that the primary role of a case study is to enhance understanding through the development and refinement of theory, not by providing representative profiles of a particular population. Thus, theory, not statistical analysis, is the means to generalize case study research. Yin fully develops this idea in the following:

A fatal flaw in doing case studies is to conceive of statistical generalization as the method of generalizing the results of the case. This is because cases are not 'sample units' and should not be chosen for this reason. Rather, individual case studies are to be selected as a laboratory investigator selects the topic of a new experiment. Multiple cases, in this sense, should be considered like multiple experiments (or multiple surveys). Under these circumstances, the method of generalization is 'analytic generalization,' in which a previously developed theory is used as a template with which to compare the empirical results of the case study. If two or more cases are shown to support the same theory, replication may be claimed. The empirical results may be considered yet more potent if two or more cases support the same theory but do not support an equally plausible, *rival* theory (p. 31).

Yin, like Kennedy, suggests ways of generalizing case study findings outside of the traditional, statistics-based paradigm. As Kennedy notes, a set of generalizations that reach beyond a representative sample drawn from a known population "...cannot be built on statistics, but is not necessarily less valid, even though the rules for drawing such inferences are not as clearly articulated (p. 665)." Both authors have attempted to make these rules more articulate, and in the process, have provided guidelines for how to focus and conduct case study research.

6.1.3 Case Study Methods

Yin states that there are four basic types of case studies, represented by a 2 x 2 matrix. On one axis, is the case study design (i.e., either the study has a single-case or multiple-case design); on the other axis is the number of units of analysis within a single case study (i.e., either the case has one unit or multiple units of analysis). Concerning the latter, a case study's primary unit of analysis may or may not entail embedded, secondary units that become a part of the overall study. For example, if the case study is a state-funded export enhancement program, a holistic approach has only one unit of analysis (i.e., the program) and focuses only on the general implementation and consequent global effects of the program. However, the same case could include a multiple set of embedded units of analysis at the project and/or participant levels, implying several different units of analysis within the same case. Concerning single- or multiple-case designs, Yin notes that "the single-case design is eminently justifiable under certain conditions--where the case represents a critical test of existing theory, where the case is a rare or unique event, or where the case serves a revelatory purpose (p. 44)." The alternative, the multi-case design, is particularly useful in testing theory, where each case is like an experiment in the laboratory. With multi-case design, the researcher can choose each case so that, according to Yin, "it either (a) predicts similar results [across cases] (a *literal replication*) or (b) produces contrasting results [across cases] but for predictable reasons (a *theoretical replication*). The ability to conduct six or ten case studies, arranged effectively within a multiple-case design, is analogous to the ability to

conduct six to ten experiments on related topics; a few cases (two or three) would be literal replications, whereas a few other cases (four to six) might be designed to pursue two different patterns of theoretical replications (p. 46)."

Regardless of which of the four case study designs are chosen, Yin contends that there are three general steps to the case study method: (1) define and design, (2) prepare, collect and analyze, and (3) analyze and conclude. The first step, define and design, is further specified to include the initial development of theory to support the case study, followed by the selection of the case(s) and the design of the data collection protocol.

The second step, "prepare, collect and analyze," concerns the fieldwork part of the case study (or studies). As Yin notes, "the *preparation* for doing a case study includes the prior skills of the investigator, the training and preparation for the specific case study, the development of a case study protocol, and the conduct of a pilot case study (p. 54, emphasis added)." The *collection* of case study data, i.e., the personal contacts and site visits, involves up to six sources of evidence: current documents, archival records, personal interviews, direct (passive) observations, participant-observations, and physical and/or cultural artifacts. Yin also notes that the collection of data from each source of evidence requires a different set of skills.²¹ The *analysis* at this stage focuses on the individual case, and how the case

²¹For the sake of brevity, further elaboration on these different skill sets is not provided here, but can be found in Yin's text, Chapter 4.

demonstrates that a particular proposition was or was not supported by the collected data. This analysis is then written up in an individual case report.

The third step in Yin's case study method is "analyze and conclude." At this step, single-case study designs limit the final analysis to any modifications in theory that are warranted given the study's findings, followed by an assessment of the policy implications of these findings. With multi-case study designs, the final analysis begins with a comparison of findings across cases, and any additional conclusions implied by these cross-case comparisons. These conclusions, along with the insights from each individual case, are then used to update relevant theory and to draw policy implications of the findings. The study is brought to a close with a write-up of a final report.

6.2 Theory in Practice: Eight Case Studies

The case studies that are the intended focus of this Chapter are the first phase of the research's empirical study of the central research question--what are the underlying forces driving the internationalization process, particularly within the context of smaller, Michigan-based agri-food firms. To gain a greater understanding of these issues, a decision was made to conduct a series of case studies targeting the principal decision makers of several agri-food firms. The following section documents the decisions that led to this particular research design, the process that guided the identification and selection of eight specific cases, and the protocol used during the case study interviews of these eight firms.

6.2.1 Designing the Case Studies

Yin suggests that the following five components of research design are particularly important for a case study approach: the questions to be researched, a priori propositions about the research subject, the case study's unit(s) of analysis, the logic linking the data to the propositions, and the criteria for interpreting the findings. The following describes in terms of these five components the process that led to the decision to conduct the eight case studies.

The study's questions: As noted in Chapter 1, this study began with a set of anecdotal observations indicating that (a) for agri-food firms, the market environment is becoming more international, and (b) individual firms were responding in a range of ways to this changing environment. These observations led to a pair of related questions that became the basis of the case study work: (1) *Why* are some, but not all, Michigan-based smaller agri-food firms internationalizing their scope or operations; and, (2) *How* is the internationalization process initiated, implemented and sustained within an individual firm?

A priori propositions: These study questions led to an extensive literature review and model building exercise, both of which are documented in the preceding chapters of this dissertation. As a quick synopsis, the proposed model suggests that the internationalization process is driven by three forces: demand in international markets that is firm-specific, firm-level competitive advantages in transaction costs, and firm-level advantages in transformation costs. An additional necessary condition is that the decision rules guiding the process motivate decision makers to act on

perceived market opportunities. The driving forces define the firm's opportunity set. Given this opportunity set and a set of operational decision rules, decision makers choose a course of action (i.e., they decide whether or not to internationalize) that generates a set of outcomes. These outcomes are summarized as changes in demand, competitive advantages, and decision maker perceptions. Since this is a dynamic process, outcomes alter the firm's opportunity set, thus initiating a new cycle of opportunities, choices, and outcomes. This set of propositions provided the general groundwork for how to proceed with the case studies.

Unit of Analysis: Since decision makers are pivotal to the model just outlined, their role is central to any analysis of the choices about whether or not the firm should enter (or exit) international markets. These choices are based on the decision maker's perceptions of the three driving forces, and they must assess and update these choices as the firm's market presence evolves over time. The two study questions about why only some firms are internationalizing and how they are doing it hinge on this central issue, i.e., the decision to internationalize. Thus, the choice about whether or not a firm should enter (or exit) international markets is the primary focus of the research.

Links between data and propositions: Although Yin does not elaborate on what he means by "the logic linking the data to the propositions," he does cite what he considers a good example of his intent--the assignment of subjects and treatment conditions in psychological experiments. The analogy of Yin's example for this research's case study design is that all firms are receiving the same "treatment" in the

form of environmental stimuli about international markets, but individual "subjects" are responding differently. One of the simplest demarcations of differentiated responses across firms is between those firms that sell their products in international markets and those that do not. As noted in earlier chapters, some research has compared exporters to non-exporters, but the vast majority of published work has focused on current exporters and their degree of involvement in and commitment to export markets. Consequently, "internationalization" literature has generally followed a protocol of examining (by survey or interview) exporters in hopes of identifying common traits and/or key "success" factors.

Guiding this research are theoretic models which purport that firms evolve through a series of "stages" of export activity (e.g., not committed, not involved; involved but not yet committed; involved and committed) or levels of export intensity (e.g., moderately involved, highly involved). As noted earlier in this dissertation, published critiques of these models have highlighted their short-comings. For example, much of the criticism has focused on the arbitrary nature of the demarcations between stages and/or levels of intensity. And although the decision to internationalize is generally considered dynamic in nature, published works often present conclusions based on static, one-time snapshots of firm behavior with little reference to the evolutionary process underlying the current state of the firm. And even when efforts have been made to incorporate the dynamics of internationalization, the common assumption is made that once a firm becomes "international" (however defined and qualified), then that firm will always be international.

Noting these criticisms, an alternative set of links between the data to be collected and the a priori propositions of this case study design was adopted. Four categories of firms were specified: strictly domestic in focus (having never sold or marketed internationally), new entrants into foreign markets (foreign sales and marketing began within the past three years), experienced practitioners in foreign markets (international sales and marketing for more than three years), and former participants in foreign markets. Although an analysis using these categories is still based on a single snapshot of firm behavior, some of the dynamics of the internationalization process are captured in the time dimension of these clear and distinctly separate categories.

Also captured by these four categories are the fundamental differences in decision makers' experiences with and attitudes about international markets. For experienced, active practitioners and for former participants, their perceptions about international markets are based on actual experiences in the market. They have first-hand knowledge of demand, and of their competitive advantages (or lack of them) in both transforming and transacting. For new entrants and domestically oriented firms, their perceptions are, at best, second hand and vicarious and at worst, purely speculative. Similarly, firms across the four categories should differ in their attitudes about international marketing. Experienced, active practitioners and new entrants should have generally positive attitudes about the potential of international markets. Domestically-oriented firms and former participants in international markets should

have either generally neutral or negative attitudes about these markets. Figure 6.1 summarizes these differences across the four categories of firms.

Knowledge Base	Perceptions of International Markets	
	Positive	Neutral/Negative
First Hand, experiential	Experienced, active practitioner	Former Participant in International Markets
Second Hand, vicarious	New Entrant	Domestic

Figure 6.1 Knowledge Base & Perceptions as Correlates to Internationalization

The four categories imply that there is a range of firm responses to similar, or even identical, market stimuli. The proposed model suggests that differences in perceptions held by decision makers about the three driving forces and their operative decision rules can explain this range of responses. By selecting cases from each of the four categories, data can be collected and compared across categories to see if the proposed driving forces and/or decision rules do, in fact, influence (or even determine) a firm's choices about whether or not to enter (or exit) international markets. In this way, the four general categories represent four specific "responses" to a general "treatment" and the data that are collected are linked to the case study's propositions.

Criteria for interpreting findings: Yin provides little help for specifying criteria for interpreting findings. He simply observes that it is useful to know in advance of data collection what is to be done with the data, that interpretations are often a matter of degree, and that the current state of the art of case study research does not provide guidelines for establishing criteria.

The dilemma of specifying criteria for interpreting findings from this dissertation's case study research can be specified as follows: if differences in perceptions about the three driving forces can be documented across the four categories (in the form of interview responses), at what point do these differences become "significant" (in a strictly figurative, non-statistical sense)?

Significance, even in a statistical sense, is still a relative term that must be interpreted by the reader. For example, there is no hard and fast rule that sets a definitive confidence interval (whether it be 99%, 95%, 90% or 80%). Thus, the first objective of the case study is to simply report any differences in decision makers' perceptions across the four categories (just as the first step of statistical reporting is to list the confidence interval). At this point, published case study literature often leaves the interpretation of the relative significance of these differences to the reader.

There are, however, additional steps that can be taken to guide the reader in interpreting any reported differences across cases. For example, when differences exist in some systematic and consistent manner across categories, these should be noted. Similarly, attempts should be made to report the degrees of differences, possibly using techniques that mimic survey techniques that are designed to capture

relative degrees of differences in respondent opinions and attitudes.²² This dissertation's case study findings will be reported using this general approach of (1) documenting differences across cases, (2) documenting any systematic or consistent patterns in these differences, and (3) documenting, if possible, the degree of these differences.

6.2.2 Selecting the Cases

The protocol for selecting firms for the case study was based on a purposeful targeting of specific industries and types of firms. The objective of the protocol was to (a) target industries in the agri-food sector that demonstrated, in a relatively even distribution, the full range of categories of firms as listed above (i.e., industries with domestically oriented firms, new entrants to foreign markets, experienced practitioners in foreign markets, and former participants in foreign markets), and (b) screen firms within these industries based on specific size and category criteria²³. In this way, the protocol controlled for two of the commonly cited explanatory variables in the internationalization literature: firm size and "industry effect". With these two variables held constant, firms from the same industry and of similar size

²²Examples from survey work include Likert scales ranging from strongly agree to strongly disagree, verbal frequency scales ranging from always to never, and ordinal scales ranking the importance of a set of variables.

²³Mandates from the funding agency provided additional constraints on the selection of industries and firms. This research is part of a project which is assessing the status and potential of Michigan's agricultural sector. To this end, only industries within the agri-food sector and only firms based in Michigan were considered for selection.

could be compared and their varied responses to essentially the same market stimuli could be studied within the context of the proposed model noted above.

The exact specifications of the constraints placed on the screening protocol were:

- (1) Michigan-based firms
- (2) Independently owned and operated firms (i.e., no subsidiaries or branch offices of out-of-state firms)
- (3) Not more than \$150 Million gross annual sales
- (4) Not more than 150 employees (full time equivalents)
- (5) Participant within the agri-food subsector, specified by select 4-digit SIC classifications
- (6) Producer/processor of a firm-specific "good."

Subsidiaries were eliminated from the profile population since it was felt that the decision processes within subsidiaries were not self-contained within the firm and thus, more difficult to analyze within the context of the proposed model. Similarly, larger firms were eliminated from the target population since most larger firms, in today's global context, are already multi-national by design and an analysis of the internationalization process within these firms would be of limited value. In contrast, the definition of "agri-food" industry was set quite broadly and included 54 four-digit Standard Industrial Classifications (SIC) ranging from farm production inputs to food processing equipment manufacturers to wholesale distributors of food products.²⁴

The requirement that the firm be a producer or processor of a firm-specific good limited possible cases to firms that sold at least one "good" that was of their own

²⁴A complete list of these 54 standard industrial classifications is provided in Appendix A. These SICs were established by the Office of Management and Budget, Executive Branch of the U.S. Government.

"creation" and could be marketed as such. For example, a food retailer would be excluded from the study, but a food retailer that packages and sells its own brand of prepared sausage roll as a side business would be included in the pool of potential case studies.

Based on these criteria, available data sets and directories were reviewed for their scope and depth of detail. Of these, Dun & Bradstreet's list of Michigan companies was by far the most comprehensive. The initial screening of this list for all firms that met the profile specified above yielded a list of over four thousand mailing addresses. To reduce the pool of potential case study candidates, the 54 SICs were cross-referenced with two state-published directories of Michigan exporters (Michigan Department of Agriculture, 1988; and, Commerce, 1994). The objective was to identify SICs with at least some firms in each of the four categories, and preferably with a robust mix of domestic oriented, new entrants, active and former exporters. Four of the 54 SIC classifications were selected as having such a mix. These four industries were:

- * sausages and other prepared meat products (SIC 2013),
- * canned fruits, vegetables and preserves (SIC 2033),
- * wine, brandy and brandy spirits (SIC 2084),
- * food products machinery (SIC 3556).

This second screening yielded 157 mailing addresses. Once again, the pool of potential cases exceeded the scope of the project's resources. A third screening limited the SIC classifications to just canned fruits, vegetables and preserves (SIC 2033) and food products machinery (SIC 3556). Based on a review of existing secondary data, these two industries (vis-a-vis SIC 2013 and SIC 2084) provided a

more even distribution of the four categories of firm responses. Out of the 66 firms within these two industries, 16 were selected in the final screening exercise. These firms were characterized as having gross annual sales and total number of employees near the mean values of all the firms within the respective SIC classifications. An additional characteristic of this set of "finalists" was that two firms per SIC were identified per category of firms, yielding a 4 x 4 matrix of 16 firms (i.e., 2 firms per SIC for two different SICs for a total of 4 firms per category for 4 categories).

6.2.3 Case Study Field Work

These sixteen firms were contacted by mail and telephone to solicit their participation in this study.²⁵ Ten of the sixteen permitted on-site interviews, eight of which led to in-depth interviews with principal decision makers.²⁶ The distribution of interviewees by position within the firm included six individuals who were either the Chief Executive Officer (CEO) or one of the firm's founding partners, one general manager of sales, and one individual who was responsible for much of the general day-to-day administrative tasks of the firm, including all the logistics of international sales and marketing. All of the firms had been in business for over ten years. The distribution by category and SIC codes was as follows:

one firm, SIC 2033, was a domestically oriented firm;
 one firm, SIC 3556, was a new entrant into foreign markets;
 four firms, all SIC 3556, were experienced, active practitioners; and,
 two firms, both SIC 2033, were former participants in foreign markets.

²⁵A sample of the letters mailed to the firms is provided in Appendix B.

²⁶A more detailed explanation of why eight of the firms were not interviewed is provided in Section 6.3.

The protocol for the site visits followed the same set approach at all sites. Having first contacted the firms with an introductory letter and follow-up telephone call, appointments with the primary decision maker were pre-arranged. Prior to departing for the site visit, a basic profile of the firm was created, based on available secondary data. This profile included general demographic information about the firm (e.g., products, size, date of founding, export activity), and when available, the background of the person to be interviewed. At the pre-arranged time, the interviewer arrived at the firm's central (and usually only) administrative office, with interview sites located throughout the state of Michigan. The interview process flowed through a series of steps: introductions and formalities, the reading of a formal consent statement that guaranteed the interviewee confidentiality (a copy of the statement and the business cards of the interviewer and project's principal investigator were given to the interviewee at this time), permission was then asked to tape-record the interview (usually, though not always granted), the substantive portion of the interview (with notes taken by the interviewer), and then typically a brief tour of the facility before departing.²⁷

The actual interviews were modeled after a format proposed by Michael Q. Patton for what he calls "depth interviewing using an interview guide." As Patton notes, "depth interviewing probes beneath the surface, soliciting detail and providing a holistic understanding of the interviewee's point of view (p. 108)." For the eight case study interviews, the sought after "holistic understanding" was the interviewee's

²⁷A copy of the consent statement is provided in Appendix B

personal attitudes and opinions about the deciding factors concerning international marketing and sales, specifically in terms of their firm's products. In order to provide some structure to the interview process, an interview guide was developed. Patton contends, an interview guide "is a list of questions or issues that are to be explored in the course of an interview (p. 111)." He continues,

An interview guide is prepared to make sure that essentially the same information is obtained from a number of people by covering the same material. The interview guide provides topics or subject areas about which the interviewer is free to explore, probe, and ask questions that will elucidate and illuminate that particular subject. The issues in the outline need not be taken in any particular order and the actual working of questions to elicit responses about those issues is not determined in advance. The interview guide simply serves as a basic checklist during the interview to make sure that all relevant topics are covered (p. 111).

Separate, but similar, interview guides were developed for the four categories of firms (i.e., domestic, new, experienced, former). Differences in the guides were primarily grammatical tenses (*would be, is, was*) and extensions of subjects in which some, but not all of the firms, had experiences (e.g., asking former exporters about why they exited international markets). These guides included several screening questions about the firm (e.g., its size, marketing scope) and a set of open-ended questions concerning the driving forces and determining factors behind their opinions and choices about international marketing and sales.²⁸

After leaving the interview sites, summaries of the interview and observations made during the site visit were written as soon as possible, often drafted at the first available road-side rest stop. These hand-written summaries and the tape recordings

²⁸Copies of the four interview guides are provided in Appendix B.

of the interviews (when available) were then used as the basis for the formal synthesis of the case study findings.

6.3 Synthesis of Case Study Findings

The case study design was, in Yin's terminology, a multi-case, single unit of analysis with both "literal" and "theoretical" replication. The sixteen firms that were originally identified as desired case studies would have permitted a robust analysis of comparisons (1) within SICs with 8 firms chosen for each SIC, (2) within categories with 4 firms chosen for each category, (3) across SICs with two SICs represented, and (4) across categories with 4 categories represented (domestic, new entrant, experienced, and former). However, the empirical reality fell short of this ideal. Six firms declined to participate in the study. Another firm was a franchise with a very specific local market mandated to it by its corporate affiliate, and thus the firm was outside of the desired firm profile. And with yet another firm, though it was genuinely interested in supporting the research, a workable interview time could not be arranged. The remaining eight firms still allowed for all four types of comparisons, but with a diminished level of comprehensiveness in the design. In particular, one type of "literal replication" (using Yin's terminology) was lost for six of the eight SIC-by-category combinations (i.e., the original design contained a pair of firms for every combination of SIC and category possible; each of these pairs would have provided literal replication of two firms with the same SIC *and* category).

Recalling Mary Kennedy's caveat, relevant attributes on which to base comparisons need to be identified before the analysis of the case study can begin. Given the proposed model, attributes related to the three driving forces (i.e., perceptions of demand, competitive advantages in transforming and competitive advantages in transacting) and the operative decision rules (e.g., maximization of profits, growth, and/or diversification) were selected for the following sets of comparisons.

6.3.1 Comparisons within SICs

Canned Fruits and Vegetables, SIC 2033: Three decision makers from firms within this SIC were interviewed. Two of these firms were former exporters while the third had always focused exclusively on domestic markets.

Concerning demand, all three decision makers asserted that the domestic markets in which they sold product were highly competitive but their current levels of sales were adequate enough to keep their production facilities running at full capacity. In fact, all three decision makers contended that domestic markets potentially offered more demand for their products than their firms would ever be able to meet. International demand wasn't even a consideration for the domestically oriented firm; the decision maker contended that "they couldn't keep up with the domestic demand as it was." And due to "quality of life" concerns, they had no plans of expanding the business or increasing their production capacity in anticipation of new and growing markets (international or otherwise). In other words, the motivation to act on international demand opportunities simply was not strong enough. The decision rules

for responding to perceived demand were not solely based on potential profits or firm growth. Other issues besides profit maximization were being factored into the decision-making process. Clearly the operative decision rules had an important effect on the decision to, in this case, not internationalize.

Concerning the two former exporters and their perceptions of demand, both discounted the opportunities that international markets might offer, citing as reasons: (1) export "taxes" (e.g., tariffs, duties) and transportation costs priced them out of foreign markets, (2) taste and preferences, especially for food items, are country- and culturally specific and their food products were best suited for the US market, and (3) domestic markets still offered lots of undeveloped potential so why bother with international demand.

Concerning competitive advantages in transforming, two of the firms were marketing commodity products that were, at best, marginally differentiated from their competitors' products. The third was selling a highly differentiated product for a narrowly defined niche market. Other than a general emphasis on quality that was expressed by all three decision makers, there were no clear patterns of choices or competitive advantages in transformation that emerged from this SIC.

Concerning competitive advantages in transacting, all three decision makers asserted with confidence that their firms could handle most aspects of international transactions, if put to the test. Financial risks and the tactical logistics were perceived as manageable, even by the one decision maker who had never made an international sale. Such things as Letters of Credit, filling out paper work, maneuvering through

customs and working with different languages were not perceived as barriers to international sales; these things may add costs and complications to the sales, but they were not perceived as prohibitive. The apparent barrier to foreign markets was an uncertainty about how to strategically create and sustain competitive advantages through transacting. For example, all three decision makers emphasized the importance of developing and nurturing personal relationships with customers, but two of the decision makers explicitly stated what the third had implied: personal relationships would be difficult, if not impossible, to establish with foreign customers. The two former exporters also noted that when they had exported in the past, they had difficulty accessing foreign markets and finding ways to deliver their products to foreign markets in a cost effective manner.

Food Products Machinery, SIC 3556: Five decision makers within this SIC were interviewed. Four of these firms were experienced, active exporters while the fifth was a new entrant into international sales.²⁹

Concerning demand, the five firms regularly received sales inquiries from both domestic and international customers, although the decision makers noted that the quality of these inquiries varied greatly in terms of actual sales potential (i.e., some inquiries were very speculative in nature while others were detailed requests with specifications for a particular product and/or service). All five firms routinely

²⁹The New Entrant had actually "dabbled" in international sales for more than three years (this dissertation's definition of an experienced exporter). The firm had their first international sale in 1986, their second in 1990. But by their own accounts, this firm did not truly "enter" (i.e., take seriously) international markets until 1994, and self-identified as a "new entrant."

pursued new market opportunities by participating in trade shows and advertising in trade journals and producer directories. These decision makers also felt that word-of-mouth generated many of the sales inquiries that they received.

Concerning competitive advantages in transforming, all five firms marketed and sold highly differentiated, technically sophisticated (and sometimes patented) equipment. The decision makers asserted that their firms either made a superior "mouse trap" or, in some cases, made the only mouse trap in the marketplace. All five decision makers believed that their product design contributed significantly to the marketability of their products, and they all felt that they had a competitive advantage in the marketplace because of superior or unique product design, product features, and support services.

Concerning competitive advantages in transacting in international markets, all five firms in this SIC had international contacts and some form of personal market presence in targeted foreign markets. All of the decision makers emphasized the importance of having someone based in the country (or at least the region) of the target market(s). All of the firms had established, either through direct hire or contracting with a "local" firm in a foreign market, a distributorship and/or distribution system in at least one other country. The decision makers contended that these local contacts enhanced, and in some cases were the sole means of creating, market access and competitiveness in the foreign market.

Concerning the decision rules employed by these five firms, the decision makers all were quick to acknowledge that potential for profitability was an important

dimension of whether or not they would act on an unsolicited order or other export opportunities. However, profitability was not a sufficient motivator in and of itself.

How a given opportunity "fit" within the overall workload also was important.

Likewise, the pressures on personal time, which expanded production in response to new market opportunities would generate, were also taken into consideration. Two of the decision makers explicitly discussed how they valued time away from the office and that some export opportunities, even if perceived to be profitable, would not be pursued simply because these decision makers did not believe the personal sacrifices warranted servicing the market demand. In other words, their decision rules involved some kind of benefit-cost assessment of the trade-offs between enhanced firm performance and preserving personal time.

6.3.2 Comparisons within Categories

Experienced, Active Exporters: All four experienced, active exporters produced machines for processing food products (i.e., all are in the SIC 3556), making these four firms a subset of the five cases just discussed in Section 6.3.1.

There are, however, important differences across these four firms, especially in how they have attempted to establish competitive advantages in transacting in international markets. Further elaboration of these differences provides a more complete picture of how transaction costs are managed by these exporting firms. For example,

- * One of the firms was founded for the explicit purpose of accessing a foreign market. This Michigan-based firm was created by a European entrepreneur seeking access to the North American market prior to the Uruguay Round of GATT. Although legally and financially independent of its "sister" company in Europe, this firm intentionally maintained close ties with its "sibling" by sharing technologies and customers. Links were also maintained through a

jointly established product and/or service line such that some products and/or services were only available at one of the sites--either just through the Michigan-based firm or just through the sister company in Europe. The decision maker believed that these close relations strengthened the firm's market position, both globally and with specifically targeted markets in the Western Hemisphere.

- * Several firms used consolidators as one way to export their products. Consolidators would "package" a requested array of equipment, products and/or services for a foreign buyer. The individual firms, by selling to U.S.-based consolidators, were able to market to international firms and/or foreign markets which they otherwise may not have been able to contact.
- * One firm took an alternative approach to consolidation, at least for one of its product lines. It chose to internalize the consolidator's role and marketed its own complete "package" of a product line, comprised almost entirely of its own products.
- * One firm was willing to self-finance a portion of its international sales. Instead of restricting all sales to letters of credit, this firm granted select customers an opportunity to purchase through a 45 or 60 day balance due policy.
- * Two firms described an effective strategy for gaining international market access. As clients internationalized their production activities, these two firms would "ride in on a client's coat-tail" by supplying products and/or services for these international ventures. And once these firms had their products in place, they would use this initial market presence to springboard into that foreign market. The decision makers explained that one of the most successful means for selling a product to an overseas client was to have a sample of what they sold already in country and in use. This physical presence was perceived as the most effective way to overcome language and cultural barriers since potential customers had much more confidence in purchasing a product or service which they had already see "up and running" in their home country.

These examples demonstrate the array of strategies firms have adopted as they attempt to meet the challenge of managing transaction costs in international markets.

Former Participants in Export Markets: The two cases that are former exporters are both classified as SIC 2033 and thus represent a subset of the cases discussed above for this SIC. But like the subset of experienced, active exporters just

discussed, there are issues within the former participants subset that need further elaboration. In particular, these two firms employ very different approaches to product development, resulting in very different strategies for establishing competitive advantages in transformation. One firm produces a relatively undifferentiated commodity product while the other produces a highly differentiated product sold to a narrowly defined market niche. However, despite these differences, the nature of their products, in the context of an international market, is very similar. As producers of processed foods, both firms face the same uphill battle of acclimating customers in foreign markets to new and often unfamiliar foods. Both decision makers alluded to the challenge this gives to estimating potential demand in international markets. Both also questioned the appropriateness of a smaller firm trying to introduce and sell "American" food products into a foreign market. And both suggested that this issue was one of the reasons why they were no longer exporting.

6.3.3 Comparisons across SICs

As just alluded to, one of the clear differences across the two SICs was the nature of the products within each classification and the implications that this has for demand. In the context of these cases, "the nature of the product" refers to the relative cultural neutrality of the products. Products in the SIC 3556, basically machines, have a relatively neutral nature about them, and their use can transcend most contemporary cultural settings without conflicting with local tastes, preferences, customs and/or social mores. On the other hand, products in the SIC 2033, basically

food items, are not neutral across cultural settings. Although there are an ample number of examples where "American-style" foods have been introduced and a sustainable demand has been created in foreign markets (e.g., Kellogg® breakfast cereal, McDonald's® fast foods), most of these successes depended upon long time horizons and deep financial pockets that permitted customers to learn and acquire new tastes and preferences. Smaller food firms may not be able to sustain a long introduction period and create a sales volume that grows beyond the small niche markets for novelty foods and "American" products. However, the ability to generalize this association between the nature of the product and internationalization, and the suggested causes for this association can only be confirmed or refuted by further empirical testing.

A second difference across the two SICs was in the decision makers' perceptions about the type of competition that their firms faced in the marketplace. In particular, the two subsets of decision makers differed in their perceptions about the number of competing substitutes in the market and in the number of firms in direct competition with their own firms. In SIC 3556, the general perception was that there were few direct competitors and few substitutes in the market for their own products. In SIC 2033, the opposite was true; decision makers felt that they were in direct competition with many competitors and many substitutes in the market.

This difference was reflected in the decision makers' general attitudes about international markets. For the five cases in SIC 3556, international markets were perceived as a means for extending their oligopolistic market power. In these

decision makers' minds, their firms offer the best choice out of a small set of "mousetraps" (or, in some cases the only mousetrap) in both the domestic and international markets, and international sales simply indicated that international customers had learned what was already known by domestic customers--given certain needs, the only (or best) place to get the product for those needs is to buy from the SIC 3556 case study firm. For the three SIC 2033 cases, international markets were perceived as a possible alternative to highly competitive domestic markets. However, as an alternative, international markets were not seen as less competitive but rather as offering a larger market in which to compete (i.e., if greater sales volume was desired, international markets might be the outlet for attaining this increase).

6.3.4 Comparisons across Categories

At least one firm from each category was interviewed, permitting cross-category comparisons in terms of demand and competitive advantages. Specifically, there were four experienced, active exporters, two former participants in export markets, one new entrant and one domestically oriented firm among the eight cases.

Concerning demand, all of the firms in three of the four categories had received and continue to receive unsolicited orders from abroad. The only firm (and category) that had never received an unsolicited order from a foreign buyer was the domestically oriented firm. As was noted in the literature review in Chapter 2, unsolicited orders from abroad are a common form of international sales for smaller firms. The literature also frequently asserts that these orders are the impetus for the internationalization process. This cross-category comparison collaborates this

assertion since the only firm with no international marketing and sales experience is the one firm that has never received an unsolicited order from abroad. However, all that is confirmed is an apparent correlation. The direction of causation is less certain; for example, would not an international firm be more likely to receive unsolicited orders?

Second, decision makers differed across categories in the decision rules they used to justify and set priorities for participation in international markets. For the domestically oriented firm, domestic markets offered sufficient demand for the firm's perceived needs, and consequently, there was no felt need to even assess the potential of international markets. The operative decision rules appeared to include some type of trade-off assessment of the need for more sales verses the costs of generating those sales internationally (or, for that matter, domestically). Since there was no mobilizing, motivating need for more sales, there was little to no motivation to even assess the potential of international markets.

Alternatively, the two former participants acknowledged that international markets offered potential sales but they both contended that, in the terms of one decision maker, there are "riper fruit on lower branches," an excellent empirical example of a "rule-of-thumb" decision rule. In other words, the two former exporters felt that their firms were well short of exploiting the full potential of domestic markets and until that had been accomplished, export markets were an unnecessary and more complicated challenge relative to available domestic opportunities.

The new entrant saw international markets in a different light. In this decision maker's view, successfully establishing a presence in international markets was the only way to assure the long term survival of his/her firm. The market environment had changed and domestic markets alone could no longer provide needed sales. For this firm, the decision rules appear to involve assessing opportunities in terms of their potential contributions to firm survival. Although one of the experienced, active exporters held a very similar view as this about domestic and international markets, the other three suggested yet another set of rules for assessing market demand. For these three exporting firms, the decision makers contended that they participated in a global market and little to no distinction was made across geographic boundaries (e.g., U.S. verses foreign). They and their customers were simply all part of one, world-wide market, and consequently, a sale was just a sale, regardless of its geographic destination. For these firms, profitability seemed to be one of the dominant factors motivating their decisions.

Concerning competitive advantages in transacting, no apparent patterns emerged. When active and former exporters were compared, both appeared to have used many of the same strategies for managing transaction costs. Decision makers in both categories noted the importance of having a "company representative" living and working locally in the targeted foreign market, and reported at least some experience in granting credit (verses only doing sales by Letters of Credit) to international customers. Also, one of the former exporters relayed his/her own personal twist to the "coat tail-spring board" strategy: initial market presence could be established

through U.S. military PX stores, and from this, the firm had been able to spring board into a wider market presence in a specific foreign market.

When firms in the four categories were compared in terms of competitive advantages in transformation costs, the only apparent patterns matched those noted above, based on comparisons across SICs. The domestically oriented firm and the two former exporters (SIC 2033) tended to compete by differentiating their products by marketing high quality outputs; the new entrant and the four active exporters (SIC 3556) tended to differentiate by the technically superior design of their products.

6.3.5 Comparisons across Individual Cases

Figure 6.2 summarizes the comparisons across the eight cases, based on the proposed necessary conditions for internationalization to occur, i.e., perceived demand, perceived competitive advantages in transformation, perceived competitive advantages in transacting, and a set of operative decision rules that provide a favorable rationale, justification and motivation to act on international opportunities. As noted in the figure, the five cases that were involved in international markets had all four of the proposed necessary conditions "in place." The three firms that were not actively participating in international markets lacked at least two of the proposed necessary conditions.

	Experienced			
	Active Exporter (n = 4)	New Entrant (n = 1)	Former Participant (n = 2)	Domestic (n = 1)
Necessary Conditions:				
Perceived Demand	yes	yes	yes	no
Perceived Competitive Advantages:				
In Transformation Costs	yes	yes	no	no
In Transaction Costs	yes	yes	yes	yes
Motivated by Decision Rules	yes	yes	no	no

Figure 6.2. Comparisons of Case Studies: Classification of Firms by Status of Proposed Necessary Conditions for Internationalization

6.4 Summary of Case Findings

The following summary of the case studies ties together the observations and comparisons of the previous sections, and in the process, addresses the initial research questions of the case studies (i.e., why and how do firms internationalize, and do the proposed driving forces accurately represent and capture the dynamics of the internationalization process?). The summary begins with a discussion of how well the case studies supported the underlying theory that guided the case study design. This is followed by a two-part assessment of how insights from the case studies can be used to evaluate and update the proposed model from Chapter 4. The summary concludes with a synopsis of the general themes that emerged from the analysis of the eight case studies.

6.4.1 Was Theory Supported?

In neoclassical economics, net profit is assumed to be the sole criterion for screening market opportunities. Without perfect information, this assumption's validity is weakened and leaves unanswered the question of why one opportunity is perceived more "attractive" than another (e.g., domestic sales verses international sales). As was noted in Chapter 2, researchers believe that assumptions of perfect information are poorly suited for modeling the internationalization decision since information availability (or rather the lack of it) is one of the key factors that distinguishes international from domestic sales. The proposed model from Chapter 4 suggests that the decision to internationalize depends on a decision maker's belief that

his/her firm can strategically manage competitive advantages and/or demand in such a way that an international market "opportunity" will be attractive.

In general, the eight case studies supported this theoretic supposition. The comments from the eight decision makers presented a consistent picture of when international markets are "attractive." Demand must be perceived to exist. The firm's product must have a competitive edge over rivals. The logistics of the international transaction must not be prohibitive. And the opportunities that these conditions create motivate, within the context of a set of decision rules, the decision maker to act. In this way, theory was supported by empirical findings.

However, there was less consistency across cases as the decision makers described in detail what they understood to be "demand, competitive advantages in transforming, and competitive advantages in transacting." For example, some inconsistency across cases arose as decision makers described how they specified what they perceived as an adequate level of demand. Some decision makers only needed to believe (at least initially) that there was latent demand in a targeted market (e.g., a food importing country with a large population). Other decision makers saw demand only in terms of specific buyers wanting specific products tailored to the unique needs of each purchase order. Similarly, with managing the logistics of transactions, different decision makers identified different components of the transaction as being the most critical, although two components were consistently named across cases: the ability to (a) access the market in a competitive way and (b) deliver the product in a way that was not cost prohibitive. Thus, the case studies also provided insights into

how the general proposed model (and underlying theory) of the internationalization process might be refined and more narrowly specified, given further empirical study and confirmation.

6.4.2 Re-assessing the Proposed Model

Re-examining proposed relationships: The case studies provide an opportunity to re-examine the causal relationships in the proposed model. Concerning the general relationships linking opportunity, choice and outcome sets, the case study results are inconclusive. Although nothing stated by the decision makers refuted the proposed conceptualization of the internationalization process, nothing stated could be considered *direct* confirmation either. The decision makers' comments readily fit the proposed dynamic flow of the model, but the vocabulary used to describe the model's causal relationships are sufficiently abstract that the observed "fit" cannot be declared substantial enough to actually confirm the model.

In Chapter 4 it was proposed that opportunity, choice and outcome sets be specified in terms of three driving forces as a way of making the model less abstract. The comments by the eight decision makers provide some preliminary confirmation of the proposition that firm-specific demand, competitive advantages in transforming and competitive advantages in transacting are pivotal determinants of the internationalization process. The decision makers from the eight case studies do think in terms of demand and competitive advantages as they consider international market opportunities. Further, a firm's general set of priorities and motivations, as represented by their decision rules, also seems to have an important influence on the

decision to internationalize. A desire to "grow the firm" and the market outlook of the decision makers (e.g., one global market verses a foreign/domestic dichotomous view of the market) are examples of possible representations of informal "rules of thumb" that guide decision making in smaller firms.

However, as noted above, decision makers specify demand and competitive advantages somewhat differently, each emphasizing his or her own ideas of what constitutes demand and competitive advantage, suggesting that the case studies confirm the importance of the proposed driving forces, but do not confirm or refute their absolute supremacy as the base-line determinants of the internationalization process. And although some insights were gained, the cases only provide preliminary specifications of the three driving forces and uncover only a limited number of examples of operative decision rules.

The case studies do help to further specify the necessary and sufficient conditions for a firm to internationalize. For example, the findings from the cases suggest that perceived demand is a necessary but not sufficient condition for firms to initiate sales to foreign markets since seven of the firms that were interviewed knew of opportunities in foreign markets but only five chose to pursue them. Having received unsolicited orders from abroad, two of the firms chose to keep their focus exclusively on domestic opportunities. However, these firms were both former exporters, suggesting that unsolicited orders from abroad may be sufficient to initiate the internationalization process, but not sustain it. Clarifying this issue is only possible with further empirical research.

With the eight cases, the more relevant aspect of demand in terms of its influence on the decision to internationalize was the perception of demand in domestic markets relative to demand in foreign markets. Perceived strong domestic demand was negatively associated with international sales, suggesting that the lack of strong domestic demand in combination with perceived demand in foreign markets might be a better way of specifying a necessary condition of the internationalization process.

The results from the cases also suggested that having a competitive advantage in managing transaction costs was a necessary but not a sufficient condition to initiate the internationalization process. Those firms that were actively exporting product had designed strategies for competitively managing international transactions. However, one of the former exporters had mastered similar competitive strategies but still had chosen to exit foreign markets, indicating that competitive advantages in transacting are a necessary but not sufficient condition.

The results of the case studies were less clear on what were the necessary and sufficient conditions, if any, in terms of a firm's competitive advantages in transforming. Weak associations between internationalization and the degree of product differentiation, and between internationalization and perceived competitive advantage were observed. However, strong associations existed between internationalization and product type (in terms of food item or machine).

Concerning the degree of differentiation, six of the case study firms had highly differentiated products but only five of the six were actively exporting; the sixth was a former exporter. And the other former exporter had had sustained export sales with

a relatively undifferentiated commodity product. Thus, the case studies indicate that differentiation is somewhat, but not uniquely, associated with internationalization.

Concerning the type of product produced by the firm, all of the active exporters (new and experienced) were marketing machinery, while the non-exporters (domestically oriented firms and former exporters) all sold food products. But one of the former exporters had had sustained sales of food items in international markets before exiting those markets. And the new entrant had postponed entering foreign markets for nearly a decade, indicating that just having a machine-based product line is not enough to initiate entry into foreign markets. Thus, the association between internationalization and product type is not definitive for all cases.

Concerning the decision makers' perceptions about their product's competitiveness, entry into international markets was associated with a belief that the firm's products could compete (in terms of design, features and quality) with any rival product *in the world*. The three decision makers who were not exporting, but rather targeting only U.S. markets, also expressed confidence in their products' ability to compete in terms of design, features and/or quality, but limited their assertions to only *the U.S. market*--an apparent difference in perspective. However, the following statement is also an accurate summary of the case studies: all eight firms perceived that their products had a competitive advantage over rivals *in their targeted market*. The non-exporters noted that their products were designed for, and thus best suited for, U.S. markets. Thus, a more precise specification of a necessary condition for internationalization is a perception that the firm's product has a competitive advantage

in transforming over rivals in the targeted foreign market. There was, however, no indication from the case studies that such a perception would be sufficient to precipitate the decision to internationalize.

Insights for Making the Proposed Model Operational: One of the key ways in which the interviews can be used to update and refine the proposed model is to use observations from the case study interviews to identify operational proxies for the theoretic variables of the proposed model. The three driving forces (i.e., demand, competitive advantages in transforming, and competitive advantages in transacting) are terms needing identifiable and measurable proxies. By synthesizing the interviews within the context of the choices firms have made about international markets, potential operational variables can be identified for further research. In this way, empirical observation (rather than armchair speculation) is used to make the abstract more tangible.

The observations noted above about demand as a driving force of the internationalization process suggest that potential proxies for measuring perceived demand include: (1) receiving unsolicited orders from abroad (e.g., a yes/no dichotomous variable), (2) a decision maker's qualitative assessment of the sales potential of unsolicited orders (e.g., percentage of unsolicited orders that have a high probability of becoming an actual sale, percentage that are purely speculative in nature), and (3) a decision maker's qualitative assessment of domestic market potential both in absolute terms (e.g., high, fair, low) and in terms relative to international market potential (e.g., higher, lower). Since the decision makers in the

case studies also observed that sales inquiries often arise from indirect sources (e.g., word-of-mouth), other easily gathered proxies for measuring potential demand would be simple yes/no dichotomous variables indicating whether or not the firm advertised in domestic and/or foreign trade journals, participated in domestic and/or international trade shows, was listed in domestic and/or international trade directories, or had customers who were active in export markets.

Concerning competitive advantages in managing transaction costs, possible proxies are a set of dichotomous variables measuring the breadth of a firm's experiences with different ways of arranging transactions, e.g., domestic and/or foreign sales on credit, through consolidators, through a distributorship system, or within the context of a joint venture. Other key measures of the firm's ability to strategically manage transaction costs would be the geographic diversity (local, regional, national, international) of past sales and the number or percentage of the firm's domestic clients that market and sell products/services to foreign markets (i.e., the potential for the coat-tail, spring-board strategy).

Concerning measures of a firm's competitive advantages in managing transformation costs, potential proxies include (1) qualitative assessments of the product differentiation strategies of the case study firm and of its rivals, (2) the general industry class of the firm's products (e.g., by SIC), and (3) a qualitative assessment of the products distinguishing competitive advantage as perceived by a firm's decision maker.

6.4.3 Conclusions -- General Themes

Demand: The case studies confirm the proposition that demand is a driving force behind the internationalization process. However, to fully understand the influence demand has on the decision to internationalize, "demand" as a concept must be de-constructed. Salient dimensions of demand that surfaced during the case studies include latent demand, perceived demand, effective demand, and relative demand. As decision makers consider market opportunities, one way of specifying these opportunities is in terms of a potential market's latent demand. A belief that latent, and as of yet undeveloped and untapped, demand exists in an international market is associated with the decision to internationalize. Perceived demand in international markets, latent or otherwise, is also associated with the decision to internationalize; if demand is not perceived, it cannot be acted upon. Monitoring if and how often a firm receives unsolicited orders from abroad is one way of measuring a firm's perceptions about demand in international markets. But the quality of these unsolicited sales inquiries vary considerably in terms of actual sales potential, indicating that decision makers must make qualitative judgments about the actual sales potential of perceived market opportunities. Hence, perceived effective demand is also associated with the decision to internationalize, just as actual effective demand experienced by the firm once it begins marketing internationally is associated with the decision to continue to export. Finally, strong domestic demand is negatively associated with the decision to internationalize, implying that relative demand, in

terms of demand in local markets relative to demand in international markets, also influences the decision to market and sell abroad.

Competitive Advantages in Transacting: Like demand, the case studies confirm the proposition that competitive advantages in transacting are a driving force behind the internationalization process. But the role of transaction costs in the decision to internationalize is better understood if a distinction is made between (1) the tactical management of the logistics of international transactions and (2) the creation of competitive advantage through the strategic management of international transactions. Logistics (e.g., translating labels into a second language, sales by Letters of Credit, paperwork associated with Customs) had little to no influence on a firm's decision about whether or not to internationalize. But the strategic creation of competitive advantage through transacting was associated with both the initial decision to internationalize and the firm's ability to sustain their market presence once the internationalization commitment was made. Of particular importance was the ability to use a variety of contractual agreements to (1) gain access to targeted international markets, (2) contain the overall costs of delivering the product to the market so that final prices were not raised to prohibitive, non-competitive levels, and (3) establish long-term relationships which can increase the trust shared between buyer and seller, thus lowering the financial costs of negotiating and enforcing contracts.

Competitive Advantages in Transforming: The case studies also confirmed that a decision maker's perceptions about his/her firm's products and the competitive advantages resulting from the product's physical attributes are associated with the

decision to internationalize. In particular, a perception that a product has a competitive advantage resulting from its design and/or features was positively associated with the decision to internationalize *when* this advantage was perceived to exist in a targeted international market. The perception that the advantage only existed in domestic markets was negatively associated with internationalization. A strategy of marketing highly differentiated products also was positively associated with the decision to internationalize, although this association was not universally true. And finally, the cultural "neutrality" of a product also influenced a firm's decision to internationalize. Firms marketing a product that readily transferred beyond its original domestic cultural setting were more likely to internationalize.

Decision Rules: Two general decision rules appeared to guide most of the choices being made about international markets. First, the anticipated profitability of a given venture clearly influenced decisions, although the eight cases indicated firms may only try to achieve some *adequate level* of profits rather than *maximize* them. Second, decision makers appear to engage in some type of assessment of the trade-offs between the gains and losses that would be incurred if internationalization is attempted. For example, potential profits and firm growth were balanced with potential loss of personal time and/or focus on other ventures and initiatives of the firm. With the eight cases, decision rules favoring profits and growth tended to encourage, or at least not inhibit, internationalization.

CHAPTER 7 DATA COLLECTION & ANALYSIS – MAIL SURVEY

The objective of Chapter 7 is to present the background to and preliminary results of a mail survey of Michigan agri-food firms that was conducted during the first two months of 1996. This mail survey was part of an on-going effort to study how perceptions about demand and competitive advantages, and a decision maker's set of operative decision rules influence the decision to internationalize. The survey was largely based on the model of the internationalization process as proposed in Chapter 4, but with added insights garnered from the eight case studies described in Chapter 6. Chapter 7 begins with a brief review of survey methods and objectives. This review is followed by a summary of the dissertation's target population and survey sample, and the methods used to contact and solicit responses. The chapter concludes with a preliminary analysis of survey responses, including cross tabulations and a compilation of written responses to several open-ended questions included in the questionnaire.

7.1 Review of Survey Literature

Surveys are one form of a general approach to data collection that assumes inferences about a target population can be made from a detailed examination of a

"representative" sample of a target population. This approach, based on the "scientific method" and theories from the field of statistics, is a formalized, systematic way of conducting investigative research that emphasizes objective (i.e., unbiased), replicable tests of hypotheses. The following section addresses in more detail the objectives of, research methods for, and representative conclusions that can be drawn from survey research.

7.1.1 Objectives of Surveys

Surveys represent the middle ground of a data-collection continuum that ranges from census-taking to the focused analysis of a single case study. Census-taking involves contacting every member of a target population (i.e., the "universe" to be studied), while a single case study involves contacting only one firm. Surveys involve contacting a subset (i.e., a "sample") of the target population, although the exact number of contacts depends on the sampling techniques and research objectives of a given study. Each of the three approaches serve somewhat different purposes. Historically, census-taking has been used by governments to guide planning, assess the socio-economic conditions of their countries, and facilitate the administration and taxation of the citizenry. As noted in Chapter 6, the principal objective of case studies is to examine and profile in great detail an example (i.e., a case) drawn from a population, primarily as a way to test and refine theory. The principal objective of surveying is to test and refine hypotheses about the general population without having to contact every member of the population. The advantages of surveys are that they are less costly than a census, and if conducted correctly, they provide a profile of the

total population that is both as accurate as a census-based profile and more representative than a profile generated by a single case or small number of case studies. Further, profiles drawn from survey data can be the basis for statistical hypothesis testing about the general population from which the survey sample was taken.

Researchers generally contend that surveys have several attributes that make them well suited for collecting socio-economic data. Alreck and Settle highlight several of these attributes in their text on survey-based research. As they note, surveys are easily customized to balance information needs and budget constraints, are versatile in both their design (i.e., means for contacting respondents) and level of attainable detail (i.e., the volume and level of complexity of data collection), and are a cost effective way of both asking a large number of questions per respondent, and of minimizing the total number of respondents needed to profile a target population. As Alreck and Settle conclude, "surveys can be designed to capture a wide variety of information on many diverse topics. Eight basic topic categories are here: *attitudes, images, decisions, needs, behavior, lifestyle, affiliations, and demographics* (p. 13, emphasis in original text)." Similarly, Bernstein suggests that there are six types of data that can be collected through survey questionnaires: facts (e.g., acreage in production, inventory counts), opinions (i.e., the view held in the mind of respondent), attitudes (i.e., prejudices; the emotional context), preferences (i.e., indications of priorities), knowledge/awareness (e.g., technical knowledge, existence

of markets), and behavior (either historical or hypothetical).³⁰ A final attribute of surveys is that the data collected from them are readily quantified (as compared to qualitative data sets), making them particularly well suited for statistical testing of hypotheses.

As a research tool, surveys meet the needs of a wide range of research objectives. When the central research questions focus on profiling a targeted population and testing hypotheses about that population, surveys are generally regarded as the desired research strategy.

7.1.2 Mail Survey Methods

The three general survey designs available to researchers are surveys conducted by mail, telephone or personal interview.³¹ Of these alternatives, mail surveys have the following advantages: greater control over (i.e., greater standardization of) contact with respondents and thus less chance of interviewer bias entering the data set, less costly (especially in terms of travel and/or telephone costs), larger feasible sample sizes, and a less intrusive means of engaging respondents.

Since the dissertation's base-line objective was to assess the driving forces behind the internationalization decision of firms in Michigan's agri-food industry,

³⁰Lecture Notes, Professor Richard H. Bersten, *AEC 860 -- Data Collection in Developing Countries*, Department of Agricultural Economics, Michigan State University, Spring Term 1990.

³¹A relatively new, fourth option is gaining some popularity in limited applications--survey by electronic mail via the Internet. Although extremely cost effective, very few target populations have universal access to the Internet, and this approach to surveying is still in the formative stage.

mail surveys were the preferred survey design. The large geographic dispersion of Michigan's agri-food firms discouraged the use of personal interviews. The large number of firms in the industry discouraged the use of telephone interviews. And since business managers often face severe time constraints, mail surveys were seen as the best way to simplify and minimize the study's need for managers' time and consideration.

The basic approach of mail surveys follows a generally accepted set protocol.³² The data collection process begins with the identification and specification of the target population, a review of available sample frames (i.e., lists of mailing addresses for individual members in the target population), and the selection of a representative sample of the population (one of the most critical steps in survey work). Another preliminary step of mail surveys is the drafting of the survey instrument. The design and exact content of the mail questionnaire are critically important since a survey by mail does not permit "real time" clarifications with respondents. The only contact that the researcher has with the respondent is the mailed questionnaire, and consequently, the questionnaire must be able to "stand on its own." Attention must be given to the "image" of the questionnaire (e.g., paper quality, type-set, the lay-out of questions, the cover page), and the ordering of the questions (start with the least controversial, and least complex). Theoretic considerations must also enter into the design since many aspects of the research

³²Examples of published specifications on how to conduct mail surveys include texts by Alreck and Settle (1985), Salant and Dillman (1994), and Dillman (1978).

question may not have readily available operational constructs that translate into survey questions. Once these issues are resolved, the final preparatory steps for a mail survey are to pre-test the questionnaire, and then pre-code the final draft in preparation for computer analysis of survey responses.

The actual mailing sequence involves four phases. Phase one is the initial mailing of the survey to the sample population; this includes a copy of the questionnaire, a cover letter that introduces the study and solicits the respondent's participation, and a postage-paid return envelope for mailing back the completed questionnaire. Phase two follows two weeks after the first mailing and consists of a reminder postcard sent to all non-respondents. Phase three follows one additional week later with a second mailing of the questionnaire, a reminder letter and a postage-paid return envelope sent to all those who have not yet responded. Phase four is a telephone call-back of ten-percent of the non-respondents (selected randomly) to test for non-response bias in the data set.

A modification of this general protocol is sometimes necessary, as was the case with this research. The initial mailing (phase 1) can be preceded by a preemptive mailing sent to the entire available sample frame (i.e., to all available mailing addresses). This preemptive mailing can be used as a way of introducing the pending study. By including a stamped and addressed return postcard, it is also a means to screen the available sample frame, and potentially increase the overall response rate of the actual mail survey. For example, if the chosen sample frame is missing the names and positions of key decision makers, this information can be

sought with a return postcard. Researchers can request firms to provide the missing information on an addressed, postage-paid return postcard that has been sent as part of the introductory mailing. This information enhances the overall validity of the study since it is generally acknowledged that surveys addressed and mailed directly to individuals have higher response rates than surveys sent to the firm with introductory letters simply addressed to some generic title (e.g., Director of Sales, General Manager). Or, if data on some criterion for pre-sorting the sample frame is unavailable, the postcard can be used as a way of identifying firms by the desired criterion before mailing the full questionnaire (e.g., does the firm export products).

These general methods for implementing mail surveys focus on the specific tactics of the process--what to send, when to send, and to whom. As an ending note to this discussion, the following insights by Dillman highlight the strategy underlying these tactics, and provides a useful conceptualization of effective surveying strategy. He contends that survey research is a type of "social exchange" between the researcher and the respondent. As mail surveys are designed and implemented, he suggests that three overall considerations guide the work: "minimize the costs for responding, maximize the rewards for doing so, and establish trust that those rewards will be delivered (p. 12)." With these three strategic guidelines, Dillman concludes that the mail survey process can be an effective, comprehensive method for collecting socio-economic data.

7.1.3 Drawing Conclusions from Mail Surveys

The degree to which survey findings can be extrapolated beyond the sample is a function of several issues alluded to in the preceding section. The sample frame, the sampling procedure, and the survey response rate have profound influences on whether or not the sample is representative of the population from which it was drawn and consequently, largely determine the degree to which research findings about the sample can be generalized. To assure that the sample is representative and the conclusions are generalizable, the following measures need to be taken.

- (1) The chosen sample frame should be comprehensive (i.e., "unbiased"), and under ideal conditions, every firm in the target population is listed in the available sample frame. For example, when conducting a mail survey, the address of every member of the target population should be on the mailing list.
- (2) The sample drawn from the sample frame should be randomly selected and every member of the sample frame should have a known, non-zero probability of being selected. Several alternative methods for drawing the random sample have been developed. These methods include both simple and restricted random sampling, where "simple" means that every member of the sample frame has an equal probability of being selected and "restricted" involves some type of sorting process prior to random selection (e.g., stratified or clustered samples).
- (3) Non-response bias should be accounted for in the findings—either measures are taken to get a response rate that approaches 100 percent, or it can be

documented that the distributions of the non-respondent population matches the distribution of the respondent population, or the direction and nature of the non-response bias can be identified and factored into the analysis of the survey responses.

By taking measures to assure that the sample is representative, researchers can apply well-established statistical analyses of survey data to substantiate generalizations about the population as a whole and to test hypotheses about causal relationships related to the target population.

7.2 An Empirical Example – Identifying a Target Population and Sample

The mail survey that is the intended focus of this Chapter is the second phase of the empirical research on the underlying driving forces initiating and sustaining the decisions about international markets being made by smaller, Michigan-based agri-food firms. In an effort to gain a more thorough understanding of this issue in a Michigan context, plans were made to send a mail survey to the principal decision makers of 250 agri-food firms in the state. The following section details the exact specifications of the mail survey's intended target population, identifies available sample frames for this target population, and documents the selection of nearly 250 firms to be the study's representative sample of the target population.

7.2.1 The Target Population and Available Sample Frames

As with the case studies discussed in Chapter 6, the mail survey phase of the empirical data collection process focused on Michigan-based, smaller agri-food firms.

The justifications for this focus are the same as before and are briefly recapped here: "Michigan-based" to keep the study manageable and true to the study's funding mandates, "smaller firms" to focus the study on the internationalization decision in "real time" since most larger firms have long since made the shift to a global scope of operations, and "agri-food firms" to focus the research on just one industrial sector, minimizing the influence of "industry effects" on the research results (i.e., control for the possibility that some industries are inherently more likely to internationalize). The exact specifications for the profile of firms to be included in the target population were identical to the profile specifications used in Chapter 6 to screen for potential case studies:

- (1) Michigan-based
- (2) Independently owned and operated (i.e., no subsidiaries or branch offices of out-of-state firms)
- (3) Not more than \$150 Million gross annual sales
- (4) Not more than 150 employees (full time equivalents)
- (5) Participant within the agri-food subsector, specified by select 4-digit SIC classifications
- (6) Producer/processor of a firm-specific "good."

Given these specifications of the target population, a search was made for available sample frames. Commercially published directories of all business firms in Michigan included directories published by American Business Directories and by Dun & Bradstreet. The former is based on a compilation of Yellow Page listings; the latter is a by-product of Dun & Bradstreet's primary activity of providing credit ratings of businesses to lending institutions. The Michigan Departments of Agriculture and Commerce also had published directories of agri-food firms, although these were narrowly defined by commodity group, or some other specification (e.g.,

Michigan exporters, U-Pick farms). Membership directories for industry associations (e.g., Michigan Food Processors Association, Michigan AgriBusiness Association) were also available, although not all segments of the agri-food industry in Michigan had commercial associations, and not all businesses choose to join these associations.

Of these, the Dun & Bradstreet list of Michigan firms was selected as the study's sample frame. This list was both comprehensive and convenient -- comprehensive in its coverage of the full range of SICs associated with the agri-food industry and convenient in that mailing addresses were readily available for downloading by computer modem, a feature which greatly reduced the workload needed to create mailing labels and initial data bases. Informal contacts with other researchers doing similar work in Michigan affirmed the decision since they also used the Dun & Bradstreet data base.

As noted in Chapter 6, this empirical research used a select subset of the Office of Management and Budget's standard industrial classifications (SICs) to define and specify the "agri-food" industry. Fifty-four SICs, ranging from farm production input suppliers to food processing equipment manufacturers, were included in the original screening; they are listed in Appendix A. Using this broad definition of "agri-food" firms proved to be an impractical specification of the target population. The Dun & Bradstreet data base contained over 4,000 mailing addresses of firms that were both within the 54 SICs and also met all five of the other screening criteria listed above. To reduce the potential target population to a more manageable number, the 54 SICs were cross-referenced with two state-published directories of Michigan

exporters (Michigan Department of Agriculture, 1988; Commerce, 1994). The objective was to identify SICs with at least some exporting firms in them, and preferably with a robust mix of exporters and non-exporters. The assumption was that the probability certain types of firms will export is very small (e.g., farm management services, wholesale grocers). This reduced the list of target SICs to 18, and when only these 18 SICs were used to define the target population, the Dun & Bradstreet data base contained 712 mailing addresses of firms that met all six screening criteria. These 712 mailing addresses were the initial base for the mail survey's sample frame.

7.2.2 Enhancing the Sample Frame – A Postcard Mailing

Although comprehensive and conveniently accessible, the Dun & Bradstreet data set proved to be less than ideal. Names and job titles of key decision makers were available, but expensive to attain. Dun & Bradstreet's pricing structure was set so that the names of firms and their mailing addresses were inexpensive, but a premium was charged for the corresponding names of the businesses' executives. Further, the search process was structured so that it was considerably more expensive to do a single simultaneous search of the data base for all 18 SICs in a way that still preserved the SIC of every firm, versus a single simultaneous search that did not preserve firm-specific SIC information. The far more affordable alternative for preserving the firm-specific SIC information was to conduct 18 separate searches, one for each SIC. The undesirable outcome of this alternative was that since some firms were classified in as many as four SICs there were 76 duplicate (i.e., identical)

addresses in the raw data base of 788 addresses downloaded from Dun & Bradstreet. These duplications were removed from the raw data base, leaving 712 unique addresses as the initial base for the sample frame.

The data base had still other limitations as a sample frame for this study. First, the chosen data base search protocol could not screen for corporate subsidiaries or branch offices; any firm that had a Michigan address and met the size and SIC constraints was included in the sample frame. Consequently, numerous firms that were subsidiaries or branch offices of other Michigan-based firms, or offices of firms based outside of the state were unintentionally included in the address list of 712 firms. Second, data on gross sales and/or number of employees were missing for many of the firms in the Dun & Bradstreet data base. The search protocol permitted the exclusion or inclusion of firms with missing data. The decision to include in the search all firms with missing data resulted in numerous firms being included in the sample frame of 712 addresses that were, it was discovered later, outside the target population's specified size constraints.

Given these limitations, a decision was made to send, in advance of any formal mail survey, a letter introducing the research project to 700 of the 712 firms identified in the Dun & Bradstreet data base search.³³ A postage-paid return postcard was included with the letter, asking the respondents to list on the card the

³³Ten of the firms identified in the data base of 712 had already been interviewed during the case study phase of this study (reference Chapter 6). Since insights from the case studies were used to draft the mail survey, these firms were not valid candidates for the sample population. Two other firms had non-Michigan addresses (but rather, street addresses on "Michigan Avenue" in other states).

name and position of the individual in their company who was "primarily responsible for sales and marketing."³⁴ The hope was that the information from the returned postcards could be used to mail surveys directly, by name, to individual decision makers.

As a second measure to enhance the sample frame data base, firms were asked to complete one screening question in addition to the request for the name and title of the person responsible for sales and marketing. Firms were asked to mark the one choice out of seven that most accurately described their past and present sales experience. The choices were:

- ☐ Domestic U.S. markets and sales have always been our sole focus
- ☐ Curious about exporting, even though we haven't exported anything yet
- ☐ New to exporting; began exporting within the past 3 years
- ☐ Experienced, active exporter; exports are less than 10% of total sales
- ☐ Experienced, active exporter; exports are more than 10% of total sales
- ☐ Withdrawing from exports; may still export but refocused to U.S. sales
- ☐ Former exporter; we have completely abandoned export sales.

These choices were an extension of the four classification approach for researching the internationalization decision proposed in Chapter 6. In that case study work, comparisons of firms were based on four classifications of firms: strictly domestic, new entrants in international markets, experienced-active practitioners, and former participants. Although the seven choices on the postcard readily collapse into the four proposed classifications from Chapter 6, the seven choices incorporate the idea of incremental degrees of international market commitment and involvement. If a sufficient numbers of responses could be generated per choice, the option to proceed

³⁴Appendix C contains a copy of the letter of introduction and reply postcard.

using seven, instead of four, classifications would be available during the mail survey phase.

A final objective of the returned postcard mailing was to use it to reduce redundancies in the address list. As noted above, the list of 712 firms contained some addresses that were duplicates and/or addresses of branch facilities (due to limits in the search protocol). For example, some companies in the Dun & Bradstreet data base were listed multiple times, once by a street address and then by a P.O. Box address in the same town, or multiple street addresses within the same community, or addresses in more than one city. It was impossible to determine a priori which address was for the head office and which were for branch facilities. Hence, every available address was mailed an introductory letter, but the returned postcard requested, in addition to the name and job title of the principal decision maker, the mailing address for that individual. The hope was that this process would identify the appropriate address for the mail survey, and thus eliminate unnecessary and costly duplications that otherwise would be incurred when mailing the questionnaire.

Respondents returned 177 of the original 700 postcards that were mailed -- in raw numbers, a 25% response rate. Of the 177 returned cards, 154 were viable candidates for the mail survey's sample population. The other 23 postcards were rejected because the companies were either now out-of-business ($n=3$), not based in Michigan ($n=5$), did not want to participate in the study ($n=7$), were intermediate processors and, in their opinion, they "did no sales" ($n=4$), due to multiple addresses, the same company mailed back more than one card ($n=3$), or the postcard

was returned too late to be included in the mail survey ($n=1$). An additional 57 letters were sent back unopened and marked "return to sender."

Concerning the 154 "usable" responses, approximately two-thirds of them indicated that their firms had never exported, but 38 of these 106 "domestic" firms marked the option, "curious about exporting." Seven percent of the respondents ($n = 11$) indicated that they were "new to exporting" while 21% ($n = 32$) indicated that they were "experienced exporters." Of these experienced exporters, 19 indicated that exports were less than 10% of total sales while the other 13 indicated that exports were more than 10% of total sales. Five firms indicated that they were currently withdrawing from export markets to refocus on U.S. markets. No firm marked the option "former exporter."

A review of these responses raised two principal concerns. First, given that only 174 firms returned postcards (20 of which were not usable), was there any non-response bias in the new data set of 154 firms? Second, the sample population of 154 firms was not large enough nor robust enough to support an analysis using either the seven classes of firms suggested by the postcard or the four proposed classifications from Chapter 6's case study work (i.e., solely domestic, new entrant, experienced and former exporters). The original target for the mail survey phase of data collection had been 40 returned surveys per classification of firm for a total of 160 returned surveys. Clearly, a larger sample population was needed to meet this objective.

To address concerns about non-response bias, ten percent of the non-responding firms were selected randomly and attempts were made to contact them by

telephone (n=47).³⁵ By interviewing a random sample of firms that did not respond to the postcard mailing, a crude comparison of postcard respondents and non-respondents is possible. The comparison provides some indication about the similarities of the two populations and if the sample population of 174 firms is "representative" of the target population as a whole. Table 7.1 summarizes the profiles of the two populations.

Although the data are insufficient for statistical analysis, the two populations appear to be similar in their composition of the different classifications of firms. Of particular note is that both subsets of the target population have a small core number of exporting firms (approximately 20% of all firms), but are dominated by domestically-oriented firms. Also, both subsets have a large number of invalid or otherwise unusable mailing addresses. And, these unusable addresses (the "other" category for the two subsets) were similarly matched. Of the firms that were telephoned, 7 were branch facilities, production sites or franchises, 5 declined to answer any questions about their firms and stated that they did not want to participate in the study, 1 was an intermediate processor so in his mind, he "did no sales," and 2 were duplicate addresses.

³⁵Of the original 700 letters sent, 57 were returned as undeliverable. An additional 174 firms responded. Total non-respondents equals 469 (700 - 231).

Table 7.1 Comparison of Postcard Respondents & Ten Percent of Non-respondents Interviewed by Telephone, SAPMA Internationalization Study, January-February, 1996

Responses:	Returned Postcards		Telephone Interviews	
	"n"	% (n/174)	"n"	% (n/38)
Only Domestic	68	39	13	34
Curious about Xpt	38	22	1	3
New Exporter	11	6	0	0
Xpts < 10% sales	19	11	4	11
Xpts > 10% sales	13	7.5	3	8
Withdrawing	5	3	0	0
Former Exporter	0	0	2	5
Other	20	11.5	15	39
Totals:	174	100	38	100
Invalid Addresses:	60 ¹		9 ²	

¹Includes 57 returned letters from original mailing (marked "return to sender") and 3 firms that stated on the returned postcards that they were no longer in business.

²Includes addresses for which there were no listings in the yellow pages or with directory assistance. The assumption is that either the addresses are out of date (firms have moved) or the firms are now out of business.

The telephone calls for the ten-percent call backs were only intended to gather enough data to compare respondents to non-respondents. However, the interviews, by the very nature of personal contact, provided additional information about the target population. For example, how a given firm self-identifies and how this study would classify the firm are not always the same. One of the "former exporters" listed in Table 7.1 self-identified as an "exclusively domestic" firm even though he had exported product to Japan over an extended period of time. Because the firm had done this "years ago" and that the product "never really took off," the respondent did not consider this relevant. Although little could be done to correct for this in analyzing the returned postcards, it is an indication that the sample population of 154 returned postcards might be more robust than the responses indicated.

7.2.3 Enhancing the Sample Frame -- Telephone Solicitations

Another insight from the call-backs was that if contact could be made with the appropriate decision makers within the firms, they were generally cooperative and interested in this study. Twenty-eight of the 47 firms that were in the "call-back" sample were viable addresses for the sample population. Decision makers at 12 of these 28 firms stated that they would complete a mail survey about their marketing and sales practices, if they were to receive one.³⁶ With this insight, the decision was made to telephone a minimum of 150 additional firms in hopes of raising the net

³⁶Of the 47 call backs, 9 addresses were completely invalid since they had no phone listing, while 10 were invalid for "other" reasons (e.g., branch office, duplicate address). The net number of addresses in the call backs that represented firms in the actual target population was 28. This net includes 5 firms that during the telephone interview declined to answer any questions about their firms.

sample population (those firms to receive a mail survey) to 250. If time permitted and data needs dictated, additional telephone contacts beyond 150 would be made.

At this point in the project, 422 of the original 712 mailing addresses from the Dun & Bradstreet database were still potential candidates for the telephone campaign.³⁷ However, not all of these addresses were included in the next stage of the data screening.

First, it was noted that within SIC 2051, bakery products, not one exporter had been identified. This was despite the fact that "bakery products" was by far the largest industry group within the original mailing of 700 firms (n=150; 21 % of total) and that 14 of the 47 randomly selected call backs (30%) had been to bakery-products firms. Out of 19 returned postcards from bakery product firms, 16 stated that their sole focus was domestic markets and only 3 indicated that they were curious about exporting. Even though it is still believed that there could be exporters in this SIC, limited time and financial resources necessitated some optimizing of the telephone campaign. For these reasons, the remaining 117 firms in the bakery products industry group were excluded from consideration during the telephone solicitations.

Second, when the original raw data base of addresses was downloaded from Dun & Bradstreet, telephone numbers were not requested (due to cost considerations). Consequently, a CD-Rom file containing all Yellow Page listings in the U.S. had to

³⁷Of the original 712 addresses, 12 were removed before mailing the introductory letter, 57 introductory letters were sent back "return to sender," 174 firms returned postcards, and 47 firms were telephoned during the call back, leaving a net of 422 firms.

be referenced in order to find telephone numbers for the remaining 305 firms (422 minus 117). Not all of these firms were listed and telephone numbers could not be found for 97 firms. Due to time and financial constraints, no further efforts (e.g., consulting the White Pages, or directory assistance) were made to find telephone listings for these 97 firms. A random sample of 150 was then taken from the set of 208 firms for which there were Yellow Pages listings. Attempts were made to contact these firms by telephone over a 3-week period, and as time permitted, more firms were randomly selected and added to the sample of 150 (with the optimistic goal of reaching a complete census of all 208 firms).

By the end of the three-week period, 155 firms were contacted, and decision makers at 76 of these firms agreed to fill out a survey as a result of these telephone calls. The other 79 firms contacted by telephone were excluded from the sample and/or target population for a variety of reasons. Many of the firms were excluded from the sample population because contact could not be made with the appropriate decision maker, despite repeated call backs and/or because the decision maker was not willing to participate in the study. Other firms were excluded from the target population because they were subsidiaries (e.g., branch facilities, production sites or franchises), or they violated location and/or size criteria. A few addresses were not valid because the firm had gone out of business.

7.2.4 Target Population, Sample Frame & Sample -- Final Counts

The original data base containing 712 addresses was not an accurate representation of this study's actual target population. As the Dun & Bradstreet data

base was "sorted out" through the postcard mailings and telephone solicitations, 171 invalid addresses were eliminated from the list because the addresses were redundant or outside the specifications of the target population. The remaining 541 addresses are a much better estimate of the target population. To have a definitive count, all 541 of these addresses would have to be cross referenced and contacted by telephone to confirm their validity -- an unnecessary exercise given the scope of this study. Given that 263 of the 541 addresses were validated in some way, this study is confident that most of the invalid addresses have been removed from the list. For this reason, the study uses 541 as its best estimate of the target population, with the caveat that this number probably over-states to some degree the actual population count and thus, under-states survey response rates.

The returned postcards and telephone interviews yielded preliminary data about the sales and marketing efforts of over 300 firms. Of these, 263 firms met all of the target population criteria and of these, 242 firms indicated in some way their willingness to cooperate with the study. Due to concerns about low counts and anticipated low response rates, two decisions were made. First, surveys would be sent to every potential respondent, implying a sample of 242 firms. Second, the data would not support analysis based on either of the proposed classification schemes (i.e., the 7 classes of firms listed on the return postcards, or the 4 classifications proposed during the case study work). Even assuming a generous 50% survey return rate, the study would need 80 firms per classification to meet the target of 40 firms per classification for analysis. Counts were well below this minimum for 3 of the 4

proposed "case-study" classifications; the situation was far worse for the 7-class scheme. For these reasons, the proposed analysis was reduced to comparisons between firms that market only in the U.S. and firms that export a portion of their products to markets outside the U.S. However, "former exporters" were still considered qualitatively different from firms that had never exported. Even though there was an insufficient number of former exporters for statistical analysis and comparisons, this classification was preserved, and the study continued to track these firms separately. Table 7.2 summarizes the sample's frequencies across industry groups and classifications of firms.

Table 7.2 Survey Sample by Industry Group and Classification of Firms, SAPMA Internationalization Study, January-February, 1996

SIC	Surveys Sent per Classification of Firms			
	Domestic	Exporter	Former	Totals ¹
2011	13	5	2	20
2013	22	4	0	26
2022	7	1	0	8
2032	1	0	0	1
2033	15	5	1	21
2034	1	1	0	2
2035	9	5	4	18
2037	2	6	1	9
2038	5	3	0	8
2043	1	0	0	1
2045	2	4	0	6
2051	18	0	0	18
2052	3	1	0	4
2053	2	0	0	2
2084	11	2	0	13
2099	27	8	2	37
3523	17	20	1	38
3556	0	10	0	10
Totals	156	75	11	242

Percent of Target Population Mailed a Survey: $242/541 = 45\%$

¹Totals by SIC are somewhat arbitrary since during data collection those firms active in more than one industry were randomly assigned to only one of the SICs in which they were active.

7.3 An Empirical Example – Implementing a Mail Survey

Closely following the protocol highlighted in the previous sections, this study used an extensive, iterative process to draft and mail questionnaires to the 242 firms in the sample. The original draft of the survey instrument was based on the cumulative insights garnered from the literature reviews, model building exercises and case studies documented in the previous chapters of this dissertation. Using these insights, questions were written as operational constructs of the proposed model and its driving forces. The design of the questionnaire divided the number of questions approximately evenly across five subject areas: (1) basic demographics of the firm (e.g., number of employees, product type, ownership structure), (2) the respondent's perceptions of both general market conditions and firm-specific market demand, (3) the respondent's perceptions about his/her company's competitive advantages in those markets in terms of transacting advantages, (4) the respondent's perceptions about his/her company's competitive advantages in those markets in terms of transforming advantages, and (5) the decision maker's operative decision rules.

The original draft of the questionnaire was pre-tested by having five decision makers within the agri-food industry complete the questionnaire and comment on its content and format.³⁸ Three of these volunteers were decision makers that had been interviewed as part of the eight case studies reviewed in the preceding chapter. The other two were from outside of Michigan but with personal ties to Michigan State

³⁸An example of the letter sent to these decision makers requesting their help with the pre-testing stage is provided in Appendix C.

University (one in the wine and spirits industry, the other in the processed beef industry). Once suggested changes from the pre-test were incorporated into the draft questionnaire, three versions of the questionnaire were created to accommodate the three categories of firms (i.e., "only domestic", "active exporter", and "former exporter"). The three versions were very similar in content and differed mostly by verb tense and temporal references (e.g., "*would/are/were* international markets *(be)* more risky than U.S. markets?"). The other major difference between the three versions was that the questionnaire sent to active exporters asked a few additional questions about the importance of export markets in terms of overall sales and marketing, and about the motivations behind the decision to internationalize. In addition to these questions, the version sent to former exporters asked them about their reasons for exiting export markets.

In its final form, the questionnaire asked decision makers at domestic, exporting and formerly exporting firms 22, 26 and 27 questions, respectively (although for all versions, many of the questions had multiple components within them). These questions were printed on the front and back of six pages of off-white 17 by 11 inch paper that was folded and stapled in booklet form (making a 12 page booklet). The cover page of the booklet contained no questions, but provided general introductory comments about the questionnaire and its supporting research project. Copies of the three versions of questionnaires are provided in Appendix C.

Based on information acquired during the postcard and telephone solicitations, the 242 firms in the sample were separated into three categories. The resulting

distribution was 156 domestic firms, 75 active exporters, and 11 former exporters. To guarantee that mailings matched the category of firm (i.e., the appropriate version of the questionnaire was sent to the firm), every firm was assigned an identification number. The coding system for these numbers began with either a 1, 2 or 3 to indicate the category of firm (domestic, exporter, former exporter, respectively), followed by one of the first 18 letters of the alphabet (A through R) to indicate which of the 18 SICs pertained to the individual firm. The letter was followed by a randomly assigned number ranging from 1 to "n", where "n" represented the total number of firms in a given SIC. For example, "1A20" would translate as a domestically oriented meat packer (where "A" = SIC 2011), that was the twentieth firm on the list of firms for that SIC. The identification number was not placed on the questionnaire, but rather was listed as a fictitious mailbox number (e.g., Room 202, Box No. 1A20) on the return address of the self addressed, postage-paid envelope that was included in the questionnaire mailing. Since respondents had incentives to use the return envelope (it was already stamped and addressed), it was assumed that the identity of the respondent could be preserved using this system.

The survey "packets" were addressed and mailed to the decision makers that were identified during the postcard and telephone solicitations; a packet contained a questionnaire, the return envelope (with coded return address), and an introductory letter addressing the decision maker by name. The letter thanked the respondents for their participation in the study and acknowledged their postcard response and/or agreement to fill in the questionnaire made during a telephone solicitation. After two

weeks, a reminder postcard was sent to all non-respondents. One week later a follow-up letter and second copy of the questionnaire and addressed return envelope were mailed to all of the firms that still had not responded.³⁹

7.4 Preliminary Analysis of Survey Responses

Out of the 242 surveys mailed, 138 firms returned questionnaires. Of this set of 138 returned surveys, 112 respondents had answered all, or nearly all, of the questions on the questionnaire, indicating a 46% survey response rate.⁴⁰ The following section profiles this set of respondents by first presenting a summary of the group's general demographics. This is followed by an analysis of a series of statistical tests of association between the category of firm (i.e., domestic or exporter) and numerous independent variables incorporated into the survey design (e.g., geographic focus of U.S. marketing efforts, decision maker's attitudes about market conditions). The section concludes with a compilation of written responses to several open-ended questions included in the questionnaire.

7.4.1 Demographics of Respondents

Table 7.3 lists the respondents by industry group and classification of firms. Of the 112 completed questionnaires, 60% were firms that had always marketed exclusively in the U.S., 33% were active exporters, and 7% were firms that had once

³⁹Copies of all relevant correspondences are provided in Appendix C.

⁴⁰The 26 "rejected" returned surveys included 5 that were completely blank, 6 that were out-of-bounds (firms were either too large or not Michigan-based), and 15 that were only partially completed.

been exporters but were now only marketing in the U.S. (i.e., "former exporters"). There were ten or more respondents for 5 of the 18 standard industrial classifications of firms included in the target population (meat packing, processed meats, canned vegetables and fruits, miscellaneous prepared foods, and farm machinery manufacturing); three SICs had no respondents (canned specialties, dehydrated vegetables and fruits, and breakfast foods). Seven of the respondents also listed "fresh fruits and/or vegetables" (SICs 0175 and/or 0161) as one of their firm's products. This combined industry group was added to the list of the original 18 SICs and included in the statistical analyses to be discussed below.

Table 7.3 Mail Survey Response Rates by Industry Group & Classification of Firms, SAPMA Internationalization Study, January-February, 1996

SIC	Surveys Returned by Classification of Firms			
	Domestic	Exporter	Former	Totals ¹
2011	5	4	1	10
2013	10	3	0	13
2022	1	1	0	2
2032	0	0	0	0
2033	8	4	2 ¹	14
2034	0	0	0	0
2035	1	3	0	4
2037	1	4	0	5
2038	4	1	0	5
2043	0	0	0	0
2045	1	2	0	3
2051	6	0	0	6
2052	3	0	0	3
2053	2	0	0	2
2084	7	0	1 ¹	8
2099	12	4	1	17
3523	6	8	2 ¹	16
3556	0	3	1 ¹	4
Totals	67	37	8	112

Returned Survey Response Rate: $112/242 = 46\%$

¹Some firms were misclassified at the pre-survey stage. As a result, some totals of returned surveys exceed the total number of surveys sent for some classifications of firms as listed in Table 7.2.

The 112 respondents represented a range of firm sizes and ownership structures. When size was measured in terms of total number of full time employees, 71% (n = 80) of the respondents reported that they employed less than 25 people, 23% (n = 26) of the respondents reported that they had 25 to 100 employees, and 5% (n = 6) reported that they had 101 to 150 employees. When size was measured in terms of total annual gross sales, 81% (n = 91) of the firms indicated that they had average gross annual sales of less than \$10 million, while 14% (n = 16) of the firms indicated that their sales averaged between \$10 and \$49 million. Only 3% (n = 3) reported annual sales of \$50 to \$99 million. Two firms did not report their annual sales figures. Concerning ownership structure, 69% (n = 77) reported that their firms were privately held corporations. The remaining firms were relatively evenly distributed across a variety of ownership alternatives including sole proprietorships (n = 21), partnerships (n = 11), a publicly held corporation and a cooperative.

Respondents also reported a considerable range in marketing approaches. When specified in terms of geographic coverage in the U.S., 22% (n = 25) of the firms indicated that they service a "local" market, 13% (n = 14) indicated a "state-wide" coverage, 29% (n = 32) indicated a "regional/inter-state" coverage, and 37% (n = 41) indicated a "national" market coverage. Concerning international markets, respondents were asked to choose between two alternative views of their targeted markets: either (a) the U.S. domestic market and international markets are two separable, distinct markets, or (b) all markets, U.S. and international, have blended into one global market. The clear majority, 78% (n = 87), saw the markets as

distinctly separable. Similarly, most firms focused their sales in domestic markets since only 7 firms reported that exports represented more than 33% of total sales during the past 12 months. Of the 37 respondents who were exporting at least some product (including the 7 just mentioned), the three most common destinations for products were Canada, the Pacific Rim and Europe.

Concerning the respondents' exposure to international markets, 12% ($n = 13$) of the firms indicated that they often receive unsolicited orders from abroad, 51% ($n = 57$) of the firms indicated that they occasionally get such orders, while 38% ($n = 42$) never receive them. As an additional assessment of the respondents' exposure to international markets, a second question asked respondents to estimate the percentage of their firms' customers who were exporters. Only 3% ($n = 3$) of the respondents indicated that between 67% and 99% of their customers were exporters, while only 4% ($n = 5$) indicated that between 34% and 66% of their customers exported. The vast majority of respondents indicated that few, if any of their customers were exporters with 43 of the respondents estimated that less than one-third of their customers exported, and 61 indicated that none of their customers did so.

To summarize, the 112 respondents tended to be smaller, privately held corporations focusing primarily on serving domestic markets, though there were numerous exceptions to these generalizations. Most firms had at least some exposure to international markets (e.g., receiving unsolicited orders from foreign buyers) and approximately 40% of the firms had at least some experience with international marketing and sales. There also was a small core of firms that exported extensively.

7.4.2 Cross Tabulations and Chi Square Test Statistic

Background Information: The eight returned questionnaires that were returned by former exporters are excluded from the following statistical analyses. Although the 8 cases provide some anecdotal evidence about firms that have entered and then exited export markets, there are an insufficient number of responses to substantiate statistical comparisons with the other two classifications of firms. Further, the assumption is that former exporters are, in some way, qualitatively different from firms that have never exported. By excluding the 8 cases, the analysis that follows focuses exclusively on the differences between firms that have never exported and firms that currently are active in export markets.

With the removal of the 8 former exporters, the returned survey response rate drops to 43%, which suggests the possibility of non-response bias in the data. However, a simple review of the frequencies shows no indication of skewness in response rates towards a particular industry group (the largest group of respondents by SIC comprises only 15% of all returned surveys), and as noted above, there is considerable diversity across respondents in terms of size, marketing scope and ownership structure. Response rates also did not differ significantly between firms that completed and returned a postcard from the original introductory mailing verses those contacted by telephone during the follow-up telephone solicitation stage. Since all of the sample had already been contacted at least once prior to the mail survey, no effort was made to call back survey non-respondents.

Cross Tabulations: A zero-one dependent variable (0 = non-exporter, 1 = exporter) was created for the 104 cases of 67 "solely domestic" non-exporters and 37 "active" exporters. Cross-tabulations and the Chi-squared test statistic were then applied to test the null hypothesis that non-exporters and exporters respond to a given question in the same way. Specifically, the null hypothesis asserts that the proportion of non-exporters selecting each response for a given question is the same as the proportion of exporters selecting among the same options for the same question. At a .05 probability level, the null hypothesis was rejected for the following mail survey questions:

- * Proportion of products sold under a brand name (all, most, some or none)?
- * Opinion about growth in markets outside the U.S. (from high growth to low on a 5 point horizontal numerical scale)?
- * Opinion about sales opportunities in markets outside the U.S. (from attractive to unattractive on a 5 point horizontal numerical scale)?
- * Opinion about their firm's potential to capture substantial market share in international markets (from unlimited to none on a 5 point horizontal numerical scale)?
- * Receive unsolicited sales inquiries from companies outside the U.S. (never, occasionally, often)?
- * For markets outside the U.S., specifying terms of payment and writing contracts *would be/are* major constraints to achieving more sales (5 point Likert scale)?⁴¹
- * For markets outside the U.S., collecting payment *would be/is* a problem with our sales (5 point Likert scale)?

⁴¹A 5-point Likert scale asks the respondent to indicate their level of agreement (strongly agree, agree, neutral, disagree, strongly disagree) with a given statement.

- * For markets outside the U.S., the customer going bankrupt and/or defaulting on payments *would be/is* a common problem in our business (5 point Likert scale)?
- * Percentage of U.S. sales made on credit (zero, 1 to 33%, 34 to 66%,..., 100%)?
- * Describe your company's current U.S. market coverage in terms of geographic range (local, state-wide, regional/inter-state, national)?

Table 7.4 summarizes the actual response distributions to these questions.

Other questions appeared to have significant differences in the response rates between non-exporters and exporters but they had low expected cell frequencies (fewer than 5 cases) in more than 20% of the cross-tab cells--a condition that compromises the validity of the conclusions of the statistical tests drawn from these questions. For some of these questions, this was remedied by collapsing the responses into fewer categories. After the responses were combined, problems with low expected cell frequencies were eliminated and the Chi-test was significant at the .05 probability level for three other independent variables:

- * The question, "What percentage of your customers are exporting their products/services (selecting from pre-set ranges of zero, 1 to 33%, 34 to 66%,..., 100%)? was converted to "Does at least one of your customers export his/her product/service (dichotomous yes/no selection)?"
- * A question about average gross annual sales (selecting from pre-set ranges of less than \$10 million, \$10 to 49 million, \$50 to 149 million, \$150 to 500 million, and over \$500 million) was converted to "Are your gross annual sales less than \$10 million, or \$10 million or more?"
- * Similarly, a question about average number of full time employees (selecting from pre-set ranges of less than 25, 25 to 49, 50 to 149, 150 to 500, more than 500) was converted to "Do you employ fewer than 25 employees, or 25 or more?"

Actual response rates for these restructured questions are also listed in Table 7.4.

For other questions, an attempt to correct for low cell counts was made by constructing indices out of several related questions. For example, indices were created that gauged the decision maker's perceptions about transaction costs in international markets and about the product mix of the firm. With the former, a series of 10 questions (all Likert 5 point scales) were combined by summing the numerical values of the responses. For the latter, the 19 SICs were collapsed into three general categories -- perishable products, non-durable goods with some shelf-life (e.g., canned food), and durable goods (e.g., manufacturing equipment). Firms involved in only one of these types of products were classified as such, while firms that marketed a mix of these three were classified in a fourth group. However, neither of these indices tested significant at the .05 probability level.

Table 7.4 Differences in Survey Responses by Non-exporters & Exporters with Cross-Tabulation Chi-squared Test Statistic Significant at .05 probability level.

Questions	Responses	Non-exporters		Exporters	
		"n"	Row %	"n"	Row %
Products sold by brand names?	All	30	73	11	27
	Most	5	33	10	67
	Some	12	71	5	29
	None	18	64	10	36
Perceived market growth potential outside the U.S.?	High growth = 1	8	57	6	43
	2	11	41	16	59
	3	22	76	7	24
	4	11	69	5	31
	Low growth = 5	15	83	3	17
Sales opportunities outside the U.S.?	attractive = 1	7	50	7	50
	2	11	38	18	62
	3	25	83	5	17
	4	12	75	4	25
	unattractive = 5	12	80	3	20
Your firm's potential to capture market share in international markets?	unlimited = 1	6	55	5	45
	2	6	40	9	60
	3	24	63	14	37
	4	19	86	3	14
	none = 5	12	67	6	33

Table 7.4 (cont'd).

Questions	Responses	Non-exporters		Exporters	
		"n"	Row %	"n"	Row %
How often do you receive unsolicited sales inquires from abroad?	never	41	98	1	2
	occasionally	25	49	26	51
	often	1	9	10	91
Specifying terms of payment and contracts <i>would be/are</i> a constraint to international sales?	strongly agree	24	80	6	20
	agree	12	48	13	52
	neutral	21	75	7	25
	disagree	7	44	9	56
	strongly disagree	3	60	2	40
Collecting payment for foreign sales <i>would be/is</i> a problem?	strongly agree	19	79	5	21
	agree	22	82	5	18
	neutral	17	68	8	32
	disagree	8	33	16	67
	strongly disagree	1	25	3	75
International customers going bankrupt and/or defaulting on payments <i>would be/is</i> a problem?	strongly agree	12	92	1	8
	agree	11	55	9	45
	neutral	30	79	8	21
	disagree	9	36	16	64
	strongly disagree	5	63	3	37

Table 7.4 (cont'd).

Questions	Responses	Non-exporters		Exporters	
		"n"	Row %	"n"	Row %
Percentage of U.S. sales on credit?	zero	28	90	3	10
	1 to 33%	13	81	3	19
	34 to 66%	11	69	5	31
	67 to 99%	11	41	16	59
	100%	4	33	8	67
What is your current U.S. market coverage in terms of geographic range?	local	22	92	2	8
	state-wide	13	93	1	7
	regional	20	69	9	31
	national	12	32	25	68
Does at least one of your customers export?	yes	20	42	28	58
	no	47	84	9	16
Annual Gross Sales?	< \$10 million	61	72	24	28
	≥ \$10 million	6	35	11	65
Number of employees?	< 25 employees	57	77	17	23
	≥ 25 employees	10	33	20	67

Summary and Interpretation: A review of the cross-tabulations gives some indication of which firm-level factors are related to the internationalization process.

A quick synopsis is:

- (1) Exporters and domestic marketers differed in their perceptions about export market potential. The cross-tabulations indicate that decision makers who perceive export markets favorably (in terms of demand, potential for sales, capturing market share, and overall growth) are associated with firms that export.
- (2) Exporters and domestic marketers differed in their perceptions about the ease of transacting in international markets. Being optimistic about one's abilities to handle transaction costs in an international setting is associated with decision makers at firms that export.
- (3) Decision makers receive differing levels of exposure to both domestic and international markets. Those decision makers that had received unsolicited orders from foreign buyers and/or had customers that were exporting, are associated with firms that are themselves exporting. Similarly, there is a positive association between being active in a broader geographic range of U.S. markets and being a firm that exports.
- (4) The size of the firm is associated with the decision to export. Larger firms -- whether measured by number of employees or gross annual sales -- tended to be exporters.
- (5) A limited product mix and/or a high degree of product differentiation did not appear to be pre-requisites for exporting. Actually for this data set, the proportion of products sold by brand name is negatively associated with being an exporter.

The cross-tabulations reveal several key points about the relationships underlying the internationalization process. First, there are clear differences between exporters and non-exporters. These differences are manifested in all facets of the proposed driving forces of the internationalization process. Exporters and non-exporters responded differently in how they differentiate their product, and larger

firms tended to be exporters (both proxies for competitive advantages in transforming). Exporters and non-exporters also differ in their self-assessments of how well they *would/can* manage international transactions (a proxy for competitive advantages in transacting), in their assessment of the potential of export markets (a proxy for perceived demand for a firm's products), and in the decision makers' exposure to broader market opportunities in both the U.S. and abroad (proxies for the decision makers' visions of where their firms are headed and the decision rules they will use to lead them there).

Second, the observed associations provide guidance in the drafting of and give legitimacy to proposed hypotheses about causal relationships between independent and dependent variables. However, cross-tabulations can only measure associations between variables. Statistically-based assertions about causality cannot be established on these comparisons alone. Even when the Chi-squared test is statistically significant, all that is known is that the two groups of respondents (i.e., exporters and non-exporters) differed in how they answered the survey question. For example, the relationship between firm size and exporting does not prove the direction of causality, or even if causality exists. Do larger firms become exporters, or do exporters become larger firms? Or alternatively, firm size could simply be an indirect measure for another variable and underlying relationship. Larger firms, through economies of size and scale, may be able to create a transformation-based competitive advantage which then leads to export opportunities. If this is the case, then the causal relationship is only indirectly related to firm size, and questions about the direction of

causality change. Now one must ask if competitive advantages in transforming lead to exporting, or does exporting lead to competitive advantages in the transformation process?

In the end, cross-tabulations can be no more than a starting point in the statistical analyses of the relationships between the decision to export and the four driving forces that are the focus of this study. The next step, which is detailed in Chapter 8, is to draft and test hypotheses of causation. The relationships just identified in the cross-tabulations form the basis of these hypotheses.

7.4.3 Open-Ended Questions and Survey Responses

An alternative way of supporting and refining hypotheses is through an assessment of the written comments that respondents have made on the returned surveys. This type of qualitative analysis complements the findings from the cross-tabulations and offers collaborative support for hypothesized correlations and causal relationships.

Respondents were asked one or two of three open-ended questions, depending on which questionnaire they were sent. All three versions of the questionnaire asked the respondents to give a brief statement as to why their firms should or should not be involved in international markets and export sales. Those respondents sent the version of the questionnaire specifically designed for active, experienced exporters were also asked to list the key information, insight, and/or event that was the deciding factor behind their decision to fill their firm's first export order. Those respondents sent the questionnaire designed for former participants in export markets were asked a

parallel question about what was the key information, insight and/or event that led to the decision to scale back and/or stop exporting their products/services. Of the 138 returned surveys, 103 respondents wrote out an answer to the first question.⁴² Of the 37 active exporters that returned surveys, 31 provided a response to the question about the deciding factor that initiated their export activities. Of the 8 returned surveys from former exporters, 3 responded to the question about the deciding factor prompting their exit from export markets.

These responses were not included in the cross tabulations for several reasons. First, by the very nature of open-ended questions, individual responses were widely divergent and not readily condensed into a small number of closed responses. Second, response rates for the open-ended questions were lower than the response rates for the closed-ended questions analyzed in previous sections. To include the responses to the first open-ended question in the statistical analysis would have eliminated questionnaires from the available pool of valid responses, an undesirable trade-off given the richness of information available by simply analyzing qualitatively the set of over 100 written responses.

Concerning the open-ended question about whether the firm should or should not be exporting, non-exporters responded in a range of ways, most of which fall under several general headings. But more importantly, these general headings support

⁴²One additional respondent's answers are not included in the following discussion since his/her firm is outside the specified bounds of the target population (i.e., the firm averages gross annual sales > \$150 M).

the proposed constructs of the internationalization model. Respondents' reasons for not exporting are grouped by these constructs, as follows:

Perceived Competitive Advantages in the Transformation Process --

Size Constraints,

"Not large enough to handle the business."

"For the size of our company, there is more than ample growth potential in the domestic market. It would therefore be both unnecessary and impractical for our company to pursue foreign markets."

"To (sic) small, not enough product currently."

"Sales staff too small; near production capacity with present sale."

Poor fit for Product Type,

"The cost of exporting a product like ours would prohibit sales."

"Products are not conducive to foreign sales, i.e., we are in agric.-tourism business -- selling entertainment locally as well as our fruit. Have some potential for Canadian customers, but only a few."

"I agree that we should be involved in the international markets on our dried fruits. On the frozen bakery products this would be more difficult to distribute."

"We have a very perishable product at this time which is vulnerable to export."

"We would like to become more involved in exporting because our product is very unique...But the fragile nature of the product is a problem when it comes to shipping overseas, etc. We were approached by an Italian company about making our cookies for them, but after investigating ways to ship to Italy, we decided it wasn't feasible."

Poor fit for Production Practices.

"Manual production of a perishable product would not allow me to lower my price to compete on an international basis."

"We do not have equipment to process cider at a low cost. Therefore large scale production is not in our plans."

"Not the same products sell outside the U.S. Similar products are manufactured by machine!"

Perceived Competitive Advantages in the Management of Transaction Costs
(expressed as perceived and anticipated difficulties with international transactions) --

"Payment may be precarious. We provide a food item--if held up in customs, could be a disaster."

"Too complicated--Too much paper work--Too many problems with transportation-frozen"

"Would be interested -- but concerned about food labeling requirements and shipping arrangements."

"Shipping and freight would be too high a cost."

"We have been able to market our products nationally without having to take the risk of going overseas. Domestic demand has been adequate for our company."

"Not worth additional risk -- even if margins were comparable, the additional headaches aren't compensated. Our previous attempts at even finding contacts for exporting were met by one brick wall after another."

"Should be, but really don't know how."

Perceived Demand (expressed as no apparent firm-specific demand) --

"I believe that there is still potential sales in the U.S. market. However, if I was contacted by someone with experience in international sales that wanted to sell my product I would be interested, provided they checked out and the price was right."

"Food products are somewhat specific country to country. Some of our products might be accepted in some other countries, but we are too small a firm to seek business outside the US (with the possible exception of southern Canada)..."

Operative Decision Rules (expressed as how international markets are a poor fit for company priorities) --

"My services and products are for local customers!"

"I sell everything I produce to repeat customers, and I do not wish to grow bigger."

"Mature product -- international supply -- most of our markets are local synergisms."

"Our product is custom made and does not even consider being part of the international market. Our product is only sold within a 5 state region, so we would have to consider a national marketing strategy before we consider an international one -- and we are not considering a national concept in the near future. We are just too small to consider it."

"No desire to export."

Some non-exporters did comment that they felt that they should be exporting. These respondents noted that exporting was a potential source of firm growth and increased sales. One non-exporter also suggested that his/her firm's long-term plans included foreign direct investments, and exporting would be a good intermediate step for establishing working trade relations.

Exporters listed a range of reasons why their firms should be exporting:

Perceived Demand --

"Our products have appeal overseas."

"If the profitability and demand is (sic) there, there is no reason not to export."

"We should be involved especially in Mexico; there is a huge demand for sweeteners and a limited supply currently."

"Should [export] because not all users of our product live in the USA, and it [exporting] is about 25% of our total sales."

"Plenty of market to develop in U.S. and Canada."

Competitive Advantages in the Transformation Process (expressed as exporting's potential to act as a release valve for excess capacity and production) --

"We should be because we have more product than US can use."

"Our company should be involved because it allows us to work our total plant; it brings to us the efficiency that we need to also compete better in U.S. markets..."

Operative Decision Rules --

Profitability,

"Export markets demand specialty products which take time and labor, but they can be very profitable."

"...We should not be involved unless the situation is right for us (profitable)."

"Our company should be involved in exporting to help us market many different products to different cultures where there (sic) value is higher."

"We should be involved, besides the tariff and \$ exchange, a Canadian customer is no different than a U.S. customer. If you can get a fair price in Canada, then go for it."

Supports Growth Objectives.

"Should: good opportunity to expand our market; more sales."

"Our company will continue to be an active participant in the export market providing our criteria are met. We should continue to be involved if we can grow our market share and add value to our product base."

"For long term growth we will need to tap into this market segment."

"Growth, opportunity, changing world"

Competitive Advantages in Transacting --

These exporters also offered suggestions as to why their firms should not be involved in exporting. Most of these comments focused on the skills needed to manage transactions and their costs in an international setting, for example:

"Any exporting we have done have (sic) been thru a broker; therefore, payments were received thru the broker. I would be hesitant in dealing directly."

"(1) Too complex transactions, (2) Need to ship full containers, (3) Need to refrigerate products, (4) limited shelf life of our products."

"Government restrictions in terms of product (meat inspections) and trade (duty) restrict our international presence..."

"Freight costs are too expensive! Lots of damage in transit"

"Quite a few of our customers are exporting our product to international markets. We don't get directly involved as the manufacturer."

"Should Not: too much of a risk, lack of proper training on paper work and legalities..."

"We should be involved in exporting where economically feasible. Our company cannot afford the heavy expense of advertising and marketing backup. Therefore, our product/price and competitiveness of quality must be our sole sales tools [in international markets]!"

Former exporters provided a very limited number of responses about whether or not their firms should be involved in export markets. One respondent did note that their products "cannot be competitively priced" in foreign markets, citing import duties and a strengthening US dollar as the reasons why. A second respondent suggested, "[exporting] is a way to try to expand a low-growth industry. However,

because our product is essentially an agricultural commodity, a certain portion of exports will always be 'on-again, off-again,' depending on other sources of supply."

When exporters were asked to identify the deciding factor that led to their first export sale, their responses were very similar to what has been documented in the internationalization literature. Nearly one-third of the respondents (9 of 31) stated that an unsolicited order (or orders over time) prompted the initial export sale. Other factors that were listed included a need to diversify, and sell excess product. The fact that export sales using Letters of Credit meant sales with cash "up front" was a noted incentive for exporting as well. Several exporters also noted that because consumers in other countries place a higher value on some products than U.S. consumers do, it is possible to get a price premium with export sales (e.g. beef entrails). Two of the exporters commented that their firms had been exporting for so long (one since the 1930s) that they did not know what prompted the first export sale.

Former exporters cited government policies (e.g. duties, packaging regulations), changes in those policies, and the cost of researching and establishing relationships abroad as the principal factors in their firms' decisions to reduce and/or end export sales.

7.5 Conclusions from the Mail Survey

The initial analyses of the mail survey data base provide further collaboration of the proposed model of the internationalization process and its driving forces. Both cross-tabulations and qualitative analysis of respondents' written comments about key

factors related to the decision to enter (or not enter) export markets suggest that perceived demand, competitive advantages in transforming and transacting, and the decision maker's vision, priorities and motivations as manifest in his/her firm's operative decision rules are all central to the overall internationalization process. Given the breadth of products and diversity of companies that were surveyed, these findings are particularly noteworthy.

The cross-tabulations revealed several relationships between proxies of the driving forces and a firm's status as an exporter or non-exporter. These proxies, written in the form of survey questions, were created from a combination of insights from past survey research on the internationalization process, the findings from the eight case studies detailed in Chapter 6, and the comments of the 5 reviewers from the pre-tests that were conducted as part of the development of the survey. Although an imperfect representation of the driving forces, the proxies are designed to capture much of the intended hypothesized relationships in the proposed model. And, as noted above, cross tabulations relating the export status of the firm to at least some of the proxies for each of the driving forces identified statistically significant differences between the two types of firms. These findings suggest that both the proposed model and the proxies used to make the proposed model operational have at least some explanatory power in relation to the overall internationalization process.

This conclusion is further substantiated by the written comments of the respondents. Using their own words and at complete liberty to identify what they considered most relevant to their own decisions about exporting, the respondents

listed essentially the same set of general issues and concerns as would be the case if the proposed driving forces are, in fact, central to the decision to internationalize.

CHAPTER 8 ECONOMETRIC ANALYSIS OF SURVEY RESPONSES

Building on the insights gained from the cross-tabulations and qualitative analyses reported in Chapter 7, this chapter extends the analysis of the mail survey data base by using econometric and statistical theory (i.e., multiple regressions and factor analyses). These analytic tools are employed to examine how the variables in the mail survey data base are related, and, when the data permit, to impute causality about the internationalization process. The chapter begins with a brief review of relevant econometric theory, followed by the development and testing of two econometric models. These models assess the relationships between the decision to internationalize and the various proposed independent explanatory variables used to describe the Michigan-based agri-food firms in the survey. The objective of this analysis is to further test and refine the hypothesized relationships between (1) the firm-level decision to internationalize its marketing efforts and (2) the proposed driving forces (i.e., firm-specific demand, competitive advantages in transacting and transforming, and the decision maker's operative decision rules).

8.1 Econometric Modeling

Econometric modeling begins with a simple abstract relationship between a dependent (i.e., endogenous) random variable and a set of independent (i.e., exogenous), explanatory variables. The classic representation of this relationship is the oft-repeated $y_i = f(\beta, X)$, where f is a functional form relating y and X , β is the vector of parameters that are being estimated by the econometric model and X is a vector of explanatory variables. The general objective of econometrics is to find a "good" estimator of β that provides a "good fit," given the functional form, and a set of observations of the dependent and corresponding independent variables.

8.1.1 General Principles of Modeling with Qualitative Dependent Variables

One of many issues that arise as this simple abstract relationship is specified in greater detail is the nature of the dependent variable. Most econometric models use dependent variables that are continuous in nature (e.g., yields, earnings, price-quantities). However, some research questions lend themselves more readily to a limited number of fixed, discrete responses. In these cases, the discrete responses are modelled as qualitative dependent variables, and specific econometric modeling and regression analyses are needed that accommodate the statistical limits of having a dependent variable that is not continuous.

The econometric literature often refers to these models as qualitative response models, and the frequency of their use and general acceptance has grown considerably in the past 15 to 20 years. As Amemiya noted in a 1981 survey article,

One of the most important developments in econometrics in the past ten years has occurred in the area of qualitative response models,...also

known as *quantal*, *categorical*, or *discrete* models...I believe that qualitative response models are so important in economics that every applied researcher should acquire at least a cursory knowledge of these [models' basic] facts (p. 1483-4).

The reason economists have recognized the importance of qualitative response models is that the models' structures are particularly well suited for examining yes/no choices (e.g., decisions to purchase, or to participate in the labor force) and/or selections made from a small number of alternatives (e.g., voting or transportation options). The simplest form of these models has a univariate dichotomous yes/no dependent variable. More complex models have polychotomous dependent variables (both ordered and unordered), or multivariate models where the probabilities of a pair of choices are examined jointly.

The general model for the univariate dichotomous model is very similar to the general regression model described above. To distinguish between the two approaches, some authors refer to the general model as *linear regression* and the dichotomous model as *logistic regression*. In a logistic regression, the dependent variable has the value of 1 if the event occurs, or the choice is selected; the variable has a value of zero if the event does not occur or if the choice is not selected.⁴³ For applications of the model in this Chapter, the dichotomous dependent variable takes on the value of 1 when the firm is an exporter and a value of zero when the firm is a non-exporter.

⁴³Actually, as Amemiya notes, the dependent variable can be assigned any two integer values. However, the use of zero and one have particular advantages in the mathematical and statistical development of the models, and are almost universally used.

The probability that the *i*th firm is an exporter is represented mathematically by the equation, $P_i = P(y_i = 1) = F(x_i^*, \theta)$, where x_i^* is a vector of independent variables and θ is the vector of unknown, but to be estimated, parameters. The functional form, F , is generally assumed to be linear, and as Kennedy notes, when the dependent variable is dichotomous (i.e., Y is a zero-one dummy variable), either a logit or a probit model should be employed to estimate the functional form.

Amemiya concurs, stating that "the probability functions used for the probit and logit models are the standard normal distribution function and the logistic distribution function respectively. Being distribution functions, they are bounded between 0 and 1 (p. 1487)." This trait is useful in that it yields estimations of probabilities that are bounded by 0 and 1, but never equal to 0 or 1 (avoiding any estimation that suggests certainty in the estimates, as would be the case if an estimated probability equalled 0 or 1).

There is little that distinguishes probit and logit models. Logistic distributions have "fatter" tails, leading Amemiya to recommend that "in the univariate dichotomous model, it does not matter much whether one uses a probit model or logit model, except in cases where data are heavily concentrated in the tails due to the characteristics of the problem being studied (p. 1487)." Kennedy suggests that the computational demands of probit models can be prohibitively complex and, for this reason, recommends logit models for univariate dichotomous models. Given that Amemiya's caveat is not thought to be relevant for the mail survey data base, this research follows Kennedy's recommendation and adopts a logit model in its analysis.

8.1.2 Logit Models using the Maximum Likelihood Estimator

The maximum likelihood estimator is one of the most common approaches used for estimating beta, the vector of parameters in an econometric model.⁴⁴ Kennedy summarizes the basis for the maximum likelihood estimator as "the idea that the sample of data at hand is more likely to have come from a 'real world' characterized by one particular set of parameter values than from a 'real world' characterized by any other set of parameter values. The maximum likelihood estimate (MLE) of a vector of parameter values β is simply the particular vector β^{MLE} that gives the greatest probability of obtaining the observed data (p. 21)." In other words, β^{MLE} is the value of β that maximizes the probability of drawing the data set that was actually attained during the data collection. Figuratively speaking, this method asks what set of parameters would most likely generate the observed data, and then calculates those parameters.

Other than its high computational demands, the maximum likelihood estimator is a "good" estimator in that it produces consistent, efficient and asymptotically normal estimators. By definition, the maximum likelihood estimator, β^{MLE} , is the value of beta that maximizes the Likelihood Function (or the natural logarithm of the Likelihood Function). Differentiating the natural logarithm of the Likelihood Function with respect to beta, and then setting this column vector of derivatives equal to zero and solving for beta generates β^{MLE} . However, since the column vector of

⁴⁴The other common method of estimating beta is Least Squares. Least squares is a method that selects parameters that minimize the sums of squared distances between the observed and the predicted values of the dependent variable.

derivatives is non-linear with respect to beta, the maximum likelihood estimator must be obtained using an iterative algorithm. Kmenta (p. 175-83), Green (p. 115-21), and Amemiya (p. 1493-8) provide detailed expositions on the mathematical development of these steps.

Both Kmenta and Amemiya also provide an explanation as to why the maximum likelihood estimator is the appropriate estimator for logit models. Quoting Kmenta:

The estimation of parameters of the logit model depends upon whether we have or do not have replicated observations on Y for each different value of X. When, as is more common, there are no (or very few) replicated observations, the method to use is *maximum likelihood* (emphasis in original; p. 550).

Amemiya provides a more substantive and illustrative explanation that is briefly summarized and paraphrased as follows. If combinations of Y and X are thought of as *cells*, the maximum likelihood estimator is necessary when there are only a few (less than 30) observations per cell. Cells represent exact matches across cases for each possible combination of the dependent variable and the independent variables. For example, if the dependent variable was either zero for non-exporter or one for exporter, and there were five independent variables in the model, then one of the cells would be comprised of all exporters who had identical values for all five independent variables. When there are a large number of independent variables, the data needs to fill each cell with 30 or more observations becomes exorbitant. For example, for the case of three independent variables, each with five distinct values, one would need 7,500 observations to fill all of the cells with 30 observations. When there are large

numbers of observations per cell, the probability distributions of each cell can be estimated, and the information contained within these estimates can be used to greatly simplify the estimation of beta for the overall model. However, when there are few observations per cell, this information is not available and the maximum likelihood estimator is needed to estimate the vector of parameters (i.e., beta).

8.2 The Base Model

The dependent variable: As was noted above, the dependent variable for the analysis that follows is a univariate, dichotomous variable that has the value of 1 when the firm is an active exporter and a value of 0 when the firm is exclusively domestic in its market orientation.

The independent variables: Independent variables for the base model were either taken directly from mail survey questions or were developed from some combination and/or manipulation of survey questions. The most common change to questionnaire data involved converting categorical questions into sets of dichotomous zero-one variables. This is a necessary step when estimating beta with logistic regression, and it creates a "new" set of variables numbering one less than the number of categorical responses in the original survey question (for an example of this conversion, reference the variables INQOFT and INQSOM discussed below).

Some survey questions were combined to form new independent variables. For example, a new independent variable was created by combining the two questions about decision makers' perceptions about the difficulty of (1) specifying payment

terms in international markets and (2) collecting payments in international markets. This new index appeared reasonable since these two questions were very similar in content and both had significant Chi-test statistics in the cross-tabulations discussed in the previous chapter (for specific details, see TCPROB and TCNEUT discussed below). Other simplifications to the data base were originally done during the cross-tabulations analysis and simply carried forward to the logistic regression. For example, questions about the number of customers who are exporters, gross annual sales, and number of employees were converted to only two responses with a greater than/less than cut-off in the response (for specific details, see CUST and EMPLOY discussed below).

The specific independent variables of the base model were selected by an iterative process in which numerous "test" models were considered, refined and/or rejected. The objective of this process was to build a parsimonious model that used those independent variables that had significant Chi-square test statistics (as discussed in Chapter 7, sections on cross-tabulations' tests for associations), that provided a "good fit" to the available data, and that were theoretically sound. The "final" test model (i.e., the base model) and the theoretic interpretations of the chosen independent variables are detailed in the following section.

Summarizing the base model in general terms of regression analysis, y_i is a zero-one dichotomous variable, x^* is a column vector of independent variables gleaned from the survey data base, the functional form of $F(x^*, \theta)$ is the logit model, and θ is

the set of parameters to be estimated by logistic regression. The probability that the *i*th firm is an exporter is, by definition, $P_i = P(y_i = 1) = F(x_i^*, \theta)$.

8.2.1 Regression Results

A maximum likelihood logistic regression model was estimated for the equation:

$$\text{Expt_Stat} = f(\text{CUST}, \text{EMPLOY}, \text{INQOFT}, \text{INQSOM}, \text{TCPROB}, \text{TCNEUT}),$$

where:

Expt_Stat = Export status of the firm; value of zero if the firm is a non-exporter, or one if the firm is an exporter;

CUST = Internationalization status of customers (i.e., Are the firm's customers exporting?); value of zero if the firm has no customers who are exporters, or one if at least one of the firm's customers exports;

EMPLOY = Classification of firm by number of employees; value of zero if the firm employs fewer than 25 full time workers, or one if the firm employs 25 or more full time workers;

INQOFT = Firm's status as a frequent recipient of unsolicited sales inquires from foreign customers (i.e., Does the firm often receive unsolicited sales inquires from abroad?); zero if the firm does not *often* receive unsolicited sales inquires from abroad, or one if it does;

- INQSOM =** Firm's status as an occasional recipient of unsolicited sales inquiries from foreign customers (i.e., Does the firm sometimes receive unsolicited sales inquiries from abroad?); zero if the firm does not *occasionally* receive unsolicited sales inquiries from abroad, or one if it does;
- TCPROB =** Decision maker's perception that transacting in international markets *would be/is* problematic (i.e., Does the decision maker perceive that specifying payment terms and collecting payments for foreign sales *would be/are* problems?); value of zero if the decision maker is either neutral about the issue or does not believe that specifying and collecting payments *would be/is* a problem; value of one if the decision maker does believe that payment issues *would be/are* problems with international sales;
- TCNEUT =** Decision maker's neutral status concerning perceptions about transaction costs in international markets; value of zero if the decision maker is not neutral (i.e., either believes that specifying and collecting payments in international markets *would be/is* a problem or that it *would not be/is not* a problem), or one if the decision maker is neutral about the issue.

Concerning these variables (CUST, EMPLOY, INQOFT, INQSOM, TCPROB and TCNEUT), logistic regression requires that all independent variables have zero-

one dichotomous values. If survey questions do not directly translate into zero-one values (e.g., yes/no questions), then survey responses must be modified before being incorporated into the regression equation. For example, INQOFT and INQSOM are a pair of categorical variables that were derived from a survey question that asked the respondent to mark the most appropriate response from a choice of three (Does your firm never, occasionally, or often receive unsolicited orders from abroad?). If both INQOFT and INQSOM have a value of 0, the respondent had marked on the survey that the firm never receives unsolicited sales inquires from abroad. When INQOFT has a value of 0 and INQSOM has a value of 1, the respondent had indicated that the firm occasionally receives unsolicited sales inquires, and when these values are reversed, it is indicated that the firm often receives unsolicited inquires.

Similarly, TCPROB and TCNEUT are a pair of variables derived from two survey questions that asked about the respondent's perceptions about specifying payment terms and collecting payments in international markets. The questions asked respondents to choose from a five-point Likert scale about whether they strongly agreed, agreed, were neutral, disagreed or strongly disagreed with two statements about the problematic nature of specifying payment terms and collecting payment with international sales. If the respondent chose either "agree" or "strongly agree" for both questions, then for that respondent, TCPROB has a value of 1 and TCNEUT has a value of 0. If the respondent chose "disagree" or "strongly disagree" for both questions, then both TCPROB and TCNEUT have values of zero. If the respondent marked "neutral" on at least one of the two questions, then TCPROB has a value of

zero and TCNEUT has a value of one. Also, if the respondent "straddled the fence" by agreeing with one statement and disagreeing with the second, then TCPROB was assigned a value of zero and TCNEUT a value of one.

Table 8.1 summarizes the parameters and test statistics for this model. These will be discussed in the following section.

Table 8.1 Parameters & Test Statistics, "Best fit" Logistic Regression, "Base" Model, SAPMA Internationalization Study & Mail Survey, Jan/Feb, 1996.

Var.	B	S.E.	Wald ¹	df	Sig ²	R ³	Exp(B)
CUST	1.27	0.59	4.55	1	.033	.137	3.55
EMPLOY	1.01	0.64	2.52	1	.112	.062	2.75
INQOFT	5.04	1.53	10.9	1	.001	.256	154.6
INQSOM	3.27	1.09	9.00	1	.003	.227	26.25
TCPROB	-1.81	0.96	3.54	1	.060	-.107	0.16
TCNEUT	-0.64	0.88	0.52	1	.470	.000	0.52
Constant	-3.40	1.24	7.55	1	.006		

¹According to Norusis, for logistic regression "the test that a coefficient is 0 can be based on the Wald statistic, which has a chi-square distribution. When a variable has a single degree of freedom [df], the Wald statistic is just the square of the ratio of the coefficient [B] to its standard error [S.E.] (p. 6)."

²The significance level for the Wald statistic (testing the null hypothesis that the coefficient is zero) is shown in the column headed "Sig."

³Norusis notes, "A statistic that is used to look at the partial correlation between the dependent variable and each of the independent variables is the R statistic...R can range in value from -1 to +1. A positive value indicates that as the variable increases in value, so does the likelihood of the event occurring. If R is negative, the opposite is true... The equation for the R statistic is

$$R = \pm \sqrt{\frac{(\text{Wald statistic} - 2K)}{-2LL_{(0)}}}$$

where K is the degrees of freedom for the variable. The denominator is -2 times the log likelihood of a base model that contains only the intercept...The sign of the corresponding coefficient is attached to R...If the Wald statistic is less than 2K, R is set to 0 (p. 5-6)."

8.2.2 Evaluating Regression Results

The column in Table 8.1 headed "B" contains the parameters of the independent variables. Unlike least squares regression, parameters from logistic regression cannot be interpreted directly. A one unit change in the value of an independent variable, x_{ij} , does not imply a corresponding "one times the value of the parameter, B_j " change in the probability, $P(y_i = 1)$, that the i th firm is an exporter. The probability that a firm is an exporter, given the one unit change in the independent variable, relies on both the change in the value of the variable and the values of the other independent variables. Consequently, changes in the value of one independent variable do not affect the probability of a firm being an exporter in a linear manner. Rather, the parameters of a logistic regression are interpreted as follows: a change in the value of the independent variable from zero to one (or one to zero) will lead to a change in the value of the ratio of the probability that a firm will export over the probability that the firm will not export. In equation form:

$$\frac{Prob(exports)}{Prob(nonexports)} = e^{B_0 + B_1X_1 + \dots + B_jX_j}$$

Although this non-linear relationship makes interpreting the signs of the parameters more complex, it is still a useful way of assessing the model. For the parameters in Table 8.1, all of the signs are plausible and confirm the theoretical

model. Positive signs on the coefficient and the R statistic for CUST indicates that having at least one customer that exports will increase the probability that the respondent will be an exporter. Similarly, the positive signs on the coefficients and R statistics for EMPLOY, INQOFT and INQSOM indicate that being larger, and receiving unsolicited sales inquiries from companies outside the U.S. will increase the probability that the respondent will export. The negative signs on the coefficients for TCPROB and TCNEUT and the negative sign on the R statistic for TCPROB indicate that not having a clear advantage in handling customer payments in international markets will decrease the probability that the respondent will export.

The significance levels of each estimated parameter in the model (the column labeled "Sig" in Table 8.1) indicate that two of the variables -- EMPLOY and TCNEUT -- are not significant at the .10 level. However, since TCNEUT is part of a pair of categorical variables, it can not be removed from the model unless TCPROB is also removed. Since TCPROB is significant at the .1 level, both variables are retained. With EMPLOY, the case is less compelling. Since most models of the internationalization process in the published literature contain a "firm size" explanatory variable, EMPLOY was kept in this model. It is also believed that firm size is a proxy, albeit an imperfect one, for measuring a firm's capacity for creating and sustaining competitive advantages in transforming -- a second reason for retaining the variable.

The far right column of Table 8.1, labelled Exp(B) , is a measure of how a change in the value of a variable (e.g., the value of CUST changes from 0 to 1) will affect the value of the ratio: $\text{Prob}(\text{export})/\text{Prob}(\text{non-export})$. This ratio is known as the odds ratio, and is formally defined as the probability that the event will occur (i.e., the firm is an exporter) over the probability that the event will not occur (i.e., the firm is a non-exporter). The values of Exp(B) indicate to what degree the odds ratio changes if, somehow, the value of one of the variables changes. For example, if for one respondent the variable CUST changed from 0 to 1 (i.e., the respondent now has at least one customer who is an exporter), then the odds ratio for that respondent, that is the ratio of the probability that the firm exports over the probability that the firm does not export, increases in value by a factor of 3.55, the value of Exp(B) for CUST in Table 8.1. The regression results indicate that the variable that has the greatest potential to affect the odds ratio is INQOFT. The Exp(B) for this variable suggests that if a firm went from never receiving unsolicited orders from abroad to frequently receiving these types of orders, the odds ratio would increase by a factor of 155.

Table 8.2, the classification table, displays the frequencies of non-exporters and exporters that have been observed as compared to the number predicted by the logistic regression. As one measure of the model's performance, the 88.46% predictive accuracy reflects well on this model.

**Table 8.2 Observed & Predicted Values for Dependent Variable,
"Base" Logit Model, SAPMA Internationalization Study &
Mail Survey, Jan/Feb, 1996**

Observed	Predicted		Percent Correct
	non-exporter	exporter	
non-exporter	60	7	89.55%
exporter	5	32	86.439%
		Overall	88.46%

The Chi-square statistic is another measure of the model's goodness of fit. This test statistic tests the null hypothesis that all of the parameters of the model except the constant are equal to zero. The test uses two calculations of the likelihood statistic (the probability of the observed results given the parameter estimates), once for when only the constant is included in the model and once for when the full model is used. The standard method of reporting the likelihood statistic is negative two times its log and for this model, the values are 135.40 and 73.86, respectively. The Model Chi-square equals the difference between these two values, in this case it equals 61.53 (with 6 degrees of freedom). At this value, the null hypothesis that all of the parameters of the model are equal to zero is rejected at the .005 probability level.

The final diagnostic test conducted on this model was to examine the 12 cases that the model incorrectly predicted. Five of the firms that were observed to be

exporters were predicted by the model to be non-exporters. Similarly, seven of the firms that were observed to be non-exporters were predicted to be exporters. These 12 cases were reviewed for patterns in responses that would identify the cases as obvious outliers, or identify an additional explanatory variable that should have been included in the logistic regression. No such pattern or explanatory variable was readily apparent, and it was concluded that given the current data set, nothing could be done to improve this model's predictive accuracy.

8.3 The Factor Model

Although the "base" logit model has predictive accuracy and its goodness of fit was validated using a series of diagnostic tests, concern still exists about the general specification of the model. Logistic regression, like any form of multi-variate analysis, is susceptible to mis-specification errors (e.g., omitting an explanatory variable that should be included in the model, or including a trivial or unrelated independent variable that should not be included). All of the independent variables in the estimated form of the logit model have some validation in economic theory and/or precedents in published research. However, the vast majority of the data that was collected with the mail survey is excluded from the final analysis if that analysis concludes with the base model. To address this concern, factor analysis was conducted on the data base to determine whether more of the available information from the mail survey could be incorporated in an analytic model.

8.3.1 General Principles of Factor Analysis

By examining the inter-relationships of observed variables, factor analysis attempts to identify a limited number of underlying, unobservable explanatory variables that exist in a given data base. As Kim and Mueller note, "factor analysis refers to a variety of statistical techniques whose common objective is to represent a set of variables in terms of a smaller number of hypothetical variables (p. 9)." The technique which creates these hypothetical variables, or "factors," uses as its impetus the correlations that exist among observed variables. In an effort to identify and analyze the unobservable variables (e.g., personality traits, aptitudes, mental images), factors are "constructed" by statistically "combining" directly observable independent variables that are correlated. The assertion is that these independent variables are correlated because they share a set of underlying "common factors." These common factors are part of an underlying structure that is composed of two types of unobservable variables: common factors and a "unique factor" (the latter is something like the residual in OLS analysis). The proportion of sample variance accounted for by the common factors underlying the observed variables are the "communalities" of the observed variables.

Factor analysis has its origins in the field of psychology but has been used in a wide range of social science research problems. Generally, this statistical approach to data analysis has been used in one of two ways. Exploratory factor analysis is a way of assessing the data to find the minimum number of factors which can explain the observed correlations. In other words, exploratory factor analysis makes no attempts

a priori to specify an underlying structure within the data set. The objective is simply to see how the observed variables "load" (i.e., group together, correlate) and then use a certain degree of subjective judgement to determine if the factors "make sense."

Alternatively, confirmatory factor analysis is used to test hypotheses about the underlying structure within the data set. If a researcher believes that there is a set number of underlying variables and asserts that certain observed variables will load on certain underlying variables, then factor analysis can be used to test these hypotheses about the underlying structure. In the context of this study's mail survey data, factor analysis was used to see if the survey questions, or a subset of these questions, formed (i.e., "loaded onto") a cohesive, intelligible set of factors related to various components of a firm and its decision maker's perceptions. This analysis was largely exploratory, since no constraints were imposed on the analysis that limited the number of factors to be identified. However, once the exploratory analysis was complete, a forced, four-factor model was tested to determine whether the data supported the proposed internationalization model with its four driving forces (i.e., perceived demand, competitive advantages in transforming, competitive advantages in transacting, and the operative decision rules employed by the firm). Both steps of the analysis are discussed below.

The first step of the factor analysis is to test for correlations among survey questions, and to assess whether or not there is sufficient correlations among these questions, or a subset of them, to warrant a factor analysis. If there appear to be correlations (as is indicated by large absolute values for the majority of the

coefficients of the partial correlations in the correlation matrix), the second step is factor extraction. With factor extraction, estimates of the common factors are made using one of several methods (e.g., the principal-axis, principal components, unweighted or weighted least squares, maximum likelihood). The third step of factor analysis involves rotating the initial factor matrix using one of several statistical methods (e.g., varimax, equamax). The goal of the rotation step is to simplify the matrix of factors and enhance the meaningfulness of the factors. This rotated factor matrix is reviewed to see if the factors are consistent with theoretical expectations (e.g., do the groups of variables that have large loadings on the same factor seem consistent with economic theory and/or pragmatic experience). Finally, factor scores are calculated using one of several methods (e.g., the regression, Bartlett, Anderson-Rubin). Factor scores are a method of converting the factor loadings into scores that can be used in subsequent analyses. For example, these scores can be used as a set of independent variables for running a logistic regression (i.e., as the "data" for the independent variables in a logit model).

8.3.2 Factor Analysis Results

Step 1 -- Correlations: A subset of 55 survey questions were selected from the original questionnaire data base and the correlation coefficients across these 55 variables were calculated. The remaining 40-plus survey questions were excluded because they had low response rates or the results from earlier analyses (e.g., cross-tabulations) indicated that the questions were poorly written or of limited value in any further analyses. The correlation matrix of the 55 variables indicated that there were

numerous variables with partial correlation coefficients that had small absolute values, implying that they had little to no correlation with the other variables. By an iterative and somewhat subjective process, variables with small partial correlation coefficients were removed from consideration for factor analysis. At the conclusion of this phase 33 questions/variables appeared to correlate with at least one other question/variable.

Aside from simply visually comparing partial correlation coefficients in the correlation matrix, two test statistics were also employed to evaluate the strength of the relationships among the variables-- Bartlett's test of sphericity and the Kaiser-Meyer-Olkin (KMO) measure of sample adequacy. Quoting the SPSS® for Windows™ Professional Statistics™ manual (Version 6.0):

Bartlett's test of sphericity can be used to test the hypothesis that the correlation matrix is an identity matrix; that is, all diagonal terms are 1 and all off-diagonal terms are 0. The test requires that the data be a sample from a multivariate normal population...[If] the value of the test statistic for sphericity (based on a chi-square transformation of the determinant of the correlation matrix) is large and the associated significance level is small, [then it is] unlikely that the population correlation matrix is an identity....

The KMO measure of sampling adequacy is an index for comparing the magnitudes of the observed correlation coefficients to the magnitude of the partial correlation coefficients...If the sum of the squared partial correlation coefficients between all pairs of variables is small when compared to the sum of the squared correlation coefficients, the KMO measure is close to 1. Small values for the KMO measure indicate that a factor analysis of the variables may not be a good idea (pp. 50-52).

Different combinations of the 33 variables that were retained for factor analysis were created and tested for their appropriateness for factor analysis. These combinations were reviewed and assessed in part by the two test statistics, and in part by the factor loadings that will be discussed below. The "best fit" combination of these 33

questions involved a subset of 23 questions. For this subset of 23 questions, the two test statistics -- the Kaiser-Meyer-Olkin test and the Bartlett Test of Sphericity -- had values of 0.75122 and 1026.04 (significance of .0000), respectively.

Step 2 -- Factor Extraction: The second step of the factor analysis was "factor extraction," the objective of which is the identification of the underlying factors that "explain" the observed correlations among the observed variables. Two issues must be resolved before these "initial factors" can be determined. First, there are numerous statistical methods for obtaining factors from a data set of correlated variables (as listed above). As noted in the SPSS manual, these methods differ primarily in how they define a "good fit" between the observed data and the estimated factors. Selecting among these alternatives is based in part on the assumptions that can be made about the sample (e.g., drawn from a multivariate normal population). The second issue is summarized by Kim and Mueller, who note that "the researcher must provide (1) either the number of common factors to be extracted, or (2) the criterion by which such a number can be determined...The most commonly used procedure of determining the number of initial factors to be extracted is a rule-of-thumb -- the rule known either as the Kaiser or eigenvalue criterion (eigenvalue greater than or equal to 1) (p. 49)."

Using the principal-axis extraction method, estimates of the initial factors for the 23 survey questions were made. The principal-axis method forms factors from linear combinations of observed variables (i.e., linear combinations of the 23 questions). These combinations are made so that each factor is uncorrelated with

other factors, and each factor accounts for a portion of the variance in the sample. The objective is to make these combinations in a way that "loads" the maximum amount of sample variance on the first factor, and then the second factor accounts for the second largest amount of sample variance and the process continues until all of the sample variance is accounted for by a set of uncorrelated factors. Correlation coefficients are calculated iteratively as these combinations are configured and re-configured. The distinguishing feature of principal-axis extraction is that as the correlation coefficient matrices are generated for each iteration, the diagonals of the correlation matrix are replaced by estimates of the communalities.

The number of factors to be extracted was set by the rule-of-thumb suggested by Kim and Mueller -- factors with eigenvalues greater than 1 would be retained as initial factors. Six factors met this criterion for the data base of 23 questions. These six initial factors accounted for 67% of the sample's variance.

Step 3 -- Rotation: The third step of the factor analysis involved "rotating the initial solution to a terminal solution." The rotation phase is nothing more than a transformation of the matrix of the initial solution into an alternative matrix. This transformation can be either orthogonal or oblique, depending on whether or not there is a desire to keep the factors uncorrelated. As noted by Kim and Mueller, this matrix transformation does not in any way alter the amount of covariance that is explained by the factors or change the "goodness of fit" of the factor structure to the sample data set. Rather, rotation is intended to simplify the results of the factor analysis by clarifying the relationships between the factors and the individual

variables. It is considered a necessary simplifying step that enhances the interpretability of the factors.

As was noted above, the initial solution of factors was determined within the context of a protocol that "loaded" the maximum amount of sample variance on the first factor, the maximum amount of residual variance still unaccounted for onto the second factor, and so on until all of the variance is accounted for by a set of uncorrelated factors. A typical outcome of this protocol is a set of factors that have correlations with several of the original variables. Having factors with high loadings on several variables complicates the interpretation of the factors. By relaxing the protocol so that the first factor need not account for the largest amount of variance and then rotating the factor matrix, a "simplified" factor matrix can be generated that has a set of factors that have non-zero loadings on only some of the variables, and sets of variables that have high loadings on only a few or even just one factor. For example, if variables A, B, and C have high loadings only on factor 1, variables D and E have high loadings only on factor 2, and variables F, G, H, and I have high loadings only on factor 3, then the factors are much more conducive to interpretation.

There are numerous methods for rotating the initial matrix, two of which were mentioned above (varimax and equamax). Kim and Mueller provide the following advice for selecting a rotation method:

Our advice to the user is that one should not be unduly concerned about the choice of the particular rotation method. If identification of the basic structuring of variables into theoretically meaningful subdimensions is the primary concern of the researcher, as is often the case in an exploratory factor analysis, almost any readily available method of rotation will do the job. Even the issue of whether factors

are correlated or not may not make much difference in the exploratory stages of analysis. It even can be argued that employing a method of orthogonal rotation (or maintaining the arbitrary imposition that the factors remain orthogonal) may be preferred over oblique rotation, if for no other reason than that the former is much simpler to understand and interpret...We advise that beginners choose one of the commonly available methods of rotation, such as Varimax if orthogonal rotation is sought or Direct Oblimin if oblique rotation is sought (p. 50).

Given this advice, Varimax method of rotation was used for the 23 survey questions. The rotated factor matrix was reviewed to determine whether the six factors from the initial solution now had large loadings on the same factors that were consistent with economic theory and/or pragmatic experience. The six factors did, in fact, form groupings of questions that followed closely with the internationalization model that has been developed throughout this research.

Factor 1 grouped six questions that were all closely related to legal and contracting constraints in international markets -- all issues related to a decision maker's perceptions about his/her firm's ability to manage **transaction costs** in international markets.

Factor 2 had high loadings on five questions about current and potential conditions (e.g., sales opportunities, overall growth, market share) of international markets related to the firm's products -- all issues related to **market demand**.

Factor 3 had high loadings on five questions about differentiating one's product in the market by price and technology employed in the design, production and processing of the firm's product -- all issues related to the firm's competitive advantage in managing its **transformation costs**.

Factor 4 had high loadings on three questions about breadth of marketing efforts and the level of exposure a given firm (and implicitly, its decision maker) had to markets beyond the local level. The three questions gauged, respectively, the frequency that the firm received unsolicited orders from companies outside the U.S., the percentage of their customers who were exporters, and the geographic range of their U.S. marketing efforts -- all issues related to a decision maker's exposure to market stimuli. These issues also are potential proxies for studying the interface between market stimuli and the decision maker's operative decision rules (e.g., **Market stimuli**, and subsequent changes in a decision maker's **perceptions** about the market, filter through **decision rules** to provide the **motivation** to change firm behavior).

Factor 5 had high loadings on two questions about the quality and specific features of the firm's products. Although these issues are similar to those captured in Factor 3, "differentiation by quality" loading as a separate factor most likely reflects the growing emphasis in U.S. businesses on quality in the market place. This factor is related to the proposed conceptual model since **quality** of product, like price and technical design, is related to how the firm creates and sustains competitive advantages in the transformation process.

Factor 6 had high loadings on two questions about the difficulty of establishing contacts and maintaining customer relations in international markets. This suggests that an inability to build **meaningful relationships** acts as a barrier to the internationalization process. This factor also fits into the proposed model since

personal relationships are a means for creating and sustaining competitive advantages in the management of transaction costs.

The initial and final statistics, and the rotated matrix from the factor analysis are listed in Appendix D.

Step 4 – Factor Scores: The fourth and final step of the factor analysis was the creation of factor scores. As is noted in the SPSS manual, "since one of the goals of factor analysis is to reduce a large number of variables to a smaller number of factors, it is often desirable to estimate factor scores for each case. The factor scores can be used in subsequent analyses to represent the values of the factors (p. 73)." Factor scores for each factor are created by summing the products of (a) the factor coefficients of factor loadings times (b) the corresponding standardized values of the original observed independent variables, where factor score coefficients are generated by one of several methods (e.g., regression, Bartlett, Anderson-Rubin). In the case of the mail survey data, factor score coefficients were generated using the regression method and six scores, one for each factor, were calculated for each of the respondents who returned a completed survey. The value of these factor scores were saved for use in a second logistic regression analysis.

8.3.3 A Second Logistic Regression

The factor loadings appeared to confirm that there is a limited number of driving forces behind the internationalization process. However, the question remained, "Do these factors have any explanatory power?" To answer this question, the scores of the six factors were used as the independent variables of another logistic

regression. This analysis proceeded identically as before, the only difference being the "new" set of independent variables.

A maximum likelihood logistic model was estimated for the equation:

$$\text{Expt_Stat} = f(\text{FAC1}, \text{FAC2}, \text{FAC3}, \text{FAC4}, \text{FAC5}, \text{FAC6}),$$

where:

Expt_Stat = Export status of the firm; value of zero if the firm is a non-exporter, or one if the firm is an exporter;

FAC1 = Factor score for **Factor 1—transacting advantage**; six survey questions had heavy loadings on this factor (i.e., questions 9bb. through 9bg., as listed in the questionnaire provided in the appendix); these six questions addressed perceptions about potential problems with specifying terms of sale, guaranteeing payments, enforceability of agreements and other contractual legalities in international markets;

FAC2 = Factor score for **Factor 2—demand**; five survey questions had heavy loadings on this factor (i.e., questions 6ba. through 6bd. and 6bf.); these five questions asked about perceived potential for growth, sales, market share, and demand in international markets;

FAC3 = Factor score for **Factor 3—transformation advantage**; five survey questions had heavy loadings on this factor (i.e., questions 2a. through 2e.); these five questions addressed how the firm differentiated its product in terms of price, substitutability, breadth of customer base,

degree of customizing of products sold, and uniqueness of overall product design;

FAC4 = Factor score for **Factor 4—market stimuli, perceptions, decision rules and motivation**; three survey questions had heavy loadings on this factor (i.e., questions 7, 15 and 21); these three questions addressed the frequency of receiving unsolicited sales inquiries from abroad, percentage of customers who are exporting, and geographic scope of U.S. marketing efforts;

FAC5 = Factor score for **Factor 5—quality (transformation advantage two)**; two survey question had heavy loadings on this factor (i.e., questions 2f. and 2g.); these two questions addressed how the firm differentiated its product in terms of quality and available features;

FAC6 = Factor score for **Factor 6—relationships (transacting advantage two)**; two survey questions had heavy loadings on this factor (i.e., questions 6be. and 9ba.); these two questions addressed customer relations in terms of customer awareness of the firm's products and the ability to establish long-term relationships with customers in international markets.

The results of this second logistic regression are summarized in Table 8.3

Table 8.3 **Coefficients & Test Statistics, Logistic Regression, "6 Factor" Model, SAPMA Internationalization Study & Mail Survey, Jan/Feb, 1996.**

Var.	B	S.E.	Wald	df	Sig	R	Exp(B)
FAC1	.73	.35	4.32	1	.038	.134	2.08
FAC2	-.96	.40	5.93	1	.015	-.174	.38
FAC3	-.82	.37	4.87	1	.027	-.149	.44
FAC4	2.47	.53	21.40	1	.000	.387	11.87
FAC5	-.91	.41	4.92	1	.027	-.150	.40
FAC6	-.93	.45	4.31	1	.038	-.133	.39
Constant	-1.07	.35	9.19	1	.002		

The parameters for the six factors are listed in the second column of Table 8.2, labeled "B." The signs on these parameters all appear consistent with theory, although the negative signs on the coefficients for FAC3 and FAC5, the transformation variables, are inconsistent with past findings. However, a negative sign on the coefficient for FAC3 would be expected if exporting was driven by economies of scale, which require the design and production of a standardized, generic product. A negative sign on FAC5 would be expected if exporting was driven by a desire to market surplus, and perhaps lower quality, products.

FAC1 reflects the firm's capacity to manage transactions in international markets. The positive sign on its coefficient implies that having this capacity (or at

least believing that one has this capacity) will increase the probability that a firm is an exporter. FAC2 represents the perception held by decision makers that potential demand in international markets is generally poor, or at best, limited. The negative sign on the coefficient implies that this attitude will decrease the probability that the firm is an exporter. FAC3 reflects a firm's tendency to differentiate one's product(s) by price and/or product design. The negative sign on its coefficient implies that producing a highly differentiated product will lower the probability that a firm is an exporter. FAC4 reflects the degree of exposure a firm receives to markets beyond the local level, and how this stimuli may motivate firms to internationalization. The positive sign on its coefficient implies that this exposure increases the probability that a firm will export. FAC5 reflects a firm's tendency to emphasize high quality in one's products. The negative sign on its coefficient implies that focusing on quality in production will decrease the probability that the firm will export. FAC6 represents the perception that customer relations are difficult in international markets. The negative sign on its coefficient implies that this perception will decrease the probability that the firm is an exporter.

In addition to having plausible signs on all of the coefficients, the observed significance levels of each of the factors (i.e., the independent variables of the model) are significant at the .05 level (the column labels "Sig" in Table 8.3).

Like Table 8.2, Table 8.4 displays the frequencies of non-exporters and exporters that have been observed as compared to the number predicted by the "6 Factor" logit model. The total number of firms, $n=98$, is less than the 104 noted

in Table 8.2 because six cases were rejected during the factor analysis for missing data. As one measure of the model's performance, the 87.76% predictive accuracy reflects well on this model.

Table 8.4 Observed & Predicted Values for Dependent Variable, "6 Factor" Logit Model, SAPMA Internationalization Study & Mail Survey, Jan/Feb, 1996.

Observed	Predicted		Percent Correct
	non-exporter	exporter	
non-exporter	56	5	91.80%
exporter	7	30	81.08%
		Overall	87.76%

The Model Chi-squared test statistic was 63.68 with six degrees of freedom, the test statistic is significant at the .005 level, and the null hypothesis -- that all of the coefficients are zero -- is rejected.

The 12 cases that the model failed to predict correctly were reviewed to determine whether there were obvious outliers or key independent variables that could explain why this had happened. However, no discernable pattern was apparent.

8.3.4 A Forced, Four-factor Factor Analysis

As was the case with the "base" model, the "six-factor" model has predictive accuracy and its goodness of fit has been validated with a series of diagnostic tests.

As was noted above, this factor analysis was exploratory in nature. No underlying structure was assumed a priori the analysis, and hence, no restrictions were imposed on the number of factors that would be generated by the analysis. However, the research documented in the preceding chapters of this dissertation has, to date, indicated that there are four basic driving forces behind the decision to internationalize. Even though the six factors generated by the factor analysis readily mesh with this general model based on the four driving forces, the alternative is to attempt to refine the factor analysis by imposing a priori the hypothesized model of four driving forces. In this way the factor analysis is confirmatory, and the results are generated to test the hypothesis that there are four, rather than six, factors underlying the survey data base.

The four-factor model was developed in a similar manner to the six-factor model, following the same basic four step process. The primary difference was the decision rule used for specifying the number of factors that the analysis would generate (the rule-of-thumb of eigenvalues equal to or greater than one was replaced by specifying that the initial solution would have 4 factors). As before, a logistic regression analysis was run using the factor scores but this time the scores were from the four-factor model.

The results of the confirmatory factor analysis and subsequent logistic regression were mixed, though generally supportive of the hypothesized model of the internationalization process. Specific output from the analysis is provided in Appendix D. Of primary concern was the reduction in sample variance that was

accounted for by the new factor model. With the six-factor model, 56% of the sample variance was accounted for with the final solution; with the four-factor model, 48% of the sample variance was accounted for with the final solution. Also, when factor scores from the four-factor model replaced the scores from the six-factor model, there was a slight reduction in the predictive accuracy of the logistic regression model, dropping from 88% to 86%. Both of these shifts indicate that for this data set, the six-factor model would be a better representations of its underlying structure.

The confirmatory factor analysis did, for the most part, generate a set of loadings that matched the hypothesized relationships. Combinations of variables that had high factor loadings in the six factor model collapsed in the predicted way with the four-factor model. As noted above, Factors 3 and 5 of the six-factor model were both related to the transformation process. The former centered on production cost and technologies employed while the latter focused on the quality and features of the product. All of the variables that had high loadings for one of these two factors in the six factor model loaded as one single **transformation advantage** factor in the four-factor model. Similarly, one of the two variables with high loadings on the **relationships** factor and all six variables for the **transaction cost** factor in the six-factor model loaded on the **transaction advantage** factor in the four factor model. The **demand** and **stimuli/decision rules/motivation** factors had the same set of variables with high loadings for both factor analyses. The lone exception to the general tendency to group as hypothesized was one of the two variables that had

loaded on the **relationship** factor in the six-factor model. This variable did not have a high loading on any of the four factors in the new model. It simply did not "fit" the hypothesized model.

The results from the confirmatory factor analysis suggest that for this data base, the six-factor model is a better representation of the data base's underlying structure. However, the results also suggest that a four-factor model has some validity and with some refinement of the general model at the data collection stage (e.g., re-phrasing a select number of survey questions), the four-factor model might yet prove to be the better representation of the internationalization process.

8.4 Synthesis of Econometric and Factor Analyses

As was noted in the opening paragraphs of this chapter, econometric analysis is intended to clarify the researcher's understanding of the relationships between variables, and when data permit, impute causality. Both the base model and the six-factor model provide insights into the relationships that drive the internationalization process. Both models confirm that a limited number of independent variables can capture key correlations between the decision to internationalize and the proposed four driving forces. And most importantly, both models identify key determinants of the firm-level decision to internationalize.

8.4.1 Implications of the "Base Model"

The results from the base model suggests that there are four critical indicators of a firm's propensity to internationalize: the frequency of receiving unsolicited

orders from abroad, the size of the firm, the level of exposure a decision maker has to others who export, and the decision maker's perceptions about the ease of specifying and collecting payments in international markets. These four variables have been identified in previously published literature and have some grounding in economic and/or management theory.

The general implications of these findings suggest that demand, economies of scale, and the decision maker's perceptions about the feasibility and accessibility of international markets are the primary determinants of the internationalization process. However, these findings are, at best, preliminary. Unsolicited orders are an imperfect measure of demand, and they were not a sufficient condition to instigate the internationalization process (as noted in the previous chapter, numerous non-exporting respondents had received unsolicited orders). Similarly, firm size may or may not have an influence on the internationalization process due to economies of scale. Firm size correlates with a wide range of firm characteristics and decision maker perceptions. It is not clear that economies of scale is the particular correlate that explains why exporting firms in the sample tend to be larger than non-exporters. And decision-maker perceptions about the feasibility and accessibility of international markets are likely proxies of a more general determinant related to the costs of negotiating and enforcing contracts (i.e., transaction costs economics).

In sum, the four variables of the base model comprise a good index for predicting which firms will internationalize but they are too preliminary to definitively explain why firms internationalize.

8.4.2 Implications of the "Six-Factor Model"

The results from the factor analysis and subsequent logistic regression suggest that the six general factors that influence the decision to internationalize are: the firm's ability to manage transaction costs and international customer relations, the firm's ability to create competitive advantage in the transformation process and/or with the quality and features of its product, the decision maker's perceptions about market demand specifically for the firm's products, and the decision maker's overall exposure to market stimuli and how perceptions, decisions and motivations are altered by this stimuli.

These findings provide some, but not universal confirmation of the base model findings just discussed above. The six-factor model provides a broader measure of firm-specific demand than the base model's variable "unsolicited orders from abroad" is capable of capturing. But in both models, demand appears to be a key determinant of the internationalization process. Similarly, transaction costs are more narrowly specified in the base model, more broadly specified in the six-factor model, but in both cases they are identified as determinants of the decision to internationalize. On the other hand, firm size is not explicitly identified as a determinant in the six-factor model. As noted above, firm size likely correlates with a wide range of variables that influence the decision to internationalize. For example, a decision maker's level of exposure to broader market alternatives for his/her firm is likely to be reflected both in decisions about entering international markets and in decisions about expanding/restricting firm size and scale. And, the likelihood of having at least one

customer that is an exporter and/or the likelihood of receiving an unsolicited order from abroad are probably higher for larger firms. All of which helps explain why, with the six-factor model, firm size is not a determinant in the internationalization process.

The six-factor model provides a more comprehensive specification of the determinants of the internationalization process. Further, this specification readily meshes with the dissertation's proposed general theoretic model of the internationalization process that focuses on four driving forces. Consequently, the six-factor model begins to extend the empirical findings of the mail survey from being the basis for a model that predicts the internationalization decisions of individual firms to being the basis for a model that expounds upon the internationalization decision of firms.

CHAPTER 9 SUMMARY AND CONCLUSIONS

This chapter is divided into four sections. The first provides a general review of the subject material covered within this document, focusing on the research questions addressed, data collected and analyses employed. The second section presents a condensed, summarized version of the theoretic model of the internationalization process that was introduced, developed and refined with this research. The third section reviews and summarizes the empirical findings of the research in terms of how they confirm the theoretic model. The last section is a prescriptive synthesis of the practical implications of the findings and suggestions for future research that would build upon what has been documented in the preceding eight chapters.

9.1 Descriptive Synthesis of Research

The research began with a general problem statement: *At the firm-level, what motivates and sustains the internationalization process? Are there identifiable driving forces that can explain why a firm would internationalize its scope of operations?*

This was supported by several auxiliary questions concerning observed differences in how similar firms were responding to apparent "opportunities" to internationalize

(i.e., only some were entering international markets), and by a set of a priori suppositions about the reasons why firms internationalize--namely, because there is demand in international markets for a firm's product, and due to its competitive advantages in transacting and transforming, the firm can competitively supply this demand, and consequently, chooses to internationalize.

The first step in addressing these questions and testing the a priori suppositions was to conduct a comprehensive literature review across the published works of four academic fields: agricultural economics, economics, management, and marketing. Using insights garnered from this review, the suppositions about why firms internationalize were transformed into a comprehensive model of the internationalization process. This model, which is as much a model of firm behavior as it is a model of the internationalization process, will be discussed more fully in the following section.

With the model as a general guide, firm-level data were collected by interviewing and surveying decision makers at smaller, Michigan-based agri-food firms. Interviewing involved eight case studies, while surveying involved mailing questionnaires to 242 Michigan-base agri-food firms, of which 112 returned useable responses (i.e., a 46% response rate). The data collection focused on understanding the decision maker's perceptions about markets, perceptions about market demand, and perceptions about his/her firm's competitive advantages resulting from (a) how the firm produced and supplied goods (i.e., in the physical transformation of inputs into outputs) and (b) how the firm organized its governance structure, given perceived

institutional constraints of the market (i.e., in the management of transaction costs). These data were collected with the intent of gaining a greater understanding of what motivated a given decision maker to stay out of, enter, or enter and then exit from international markets, as appropriate for a given case.

Data analysis included a qualitative assessment of data generated by eight case studies, a base-run logistic regression model and a factor analysis of mail survey data, and a second logistic regression model using factor scores from the factor analysis as the independent variables of the regression model. The degree to which these analyses confirmed the proposed model of the internationalization process is discussed in Section 9.3.

9.2 An Overview of a Model of the Internationalization Process

The complete model of the internationalization process is built on the assertion that decision making in general, and a firm's decisions related to international markets in particular, are part of an iterative, dynamic system of stock variables and flow processes linked by a set of feedback loops. This system of firm behavior contains three sets of stock variables: perceived opportunities in the form of an opportunity set, choices made in the form of a choice set, and market outcomes (i.e., performance) in the form of an outcome set. The system also contains three flow processes: a decision making process, a transacting process and a learning process. Each of these processes are set to equations specified by a generalized functional form. For the decision making process, the functional form is specified by a set of

decision rules (e.g., profit maximization). For the transacting process, the functional form is specified by a set of transacting rules (e.g., price set by a price auction equalizing mechanism, where the product is sold to the highest bidder). For the learning process, the functional form is specified by a set of adoption rules (e.g., adopt when an analysis of the benefits over costs of a "new idea" return above a minimum reservation return).

The system cycles so that the opportunity set is the input into the decision making process, out of which comes a choice set. The choice set is simultaneously also the input into the transacting process, which, in turn, generates an outcome set. The outcome set is linked back to the opportunity set by a learning process that permits the decision maker to internalize the information in the outcome set, update his/her perceptions about the opportunity set, and then through the decision making process, generate a new, updated choice set. This updated choice set then feeds into the transacting process to generate a new outcome set. The model continues cyclicly and indefinitely into the future in this manner. A graphic representation of the model is in Chapter 4, page 80.

The system is initiated and sustained by several fundamental economic forces and causal relationships that relate demand and supply by way of the market. These driving forces include perceived demand and competitive advantages in supplying this demand--where competitive advantages are derived from either the production function (transformation cost advantages) and/or the firm's governance structure (transaction cost advantages). Economic theory asserts that a firm, given an assumed

decision rule (e.g., profit maximization), will be motivated to supply market demand when market conditions (i.e., the perceived opportunity set constrained by the firm's production function and governance structure) meets the criteria of the decision rule. Economic theory also asserts that suppliers' discovery of customers, customers' discovery of suppliers, and price discovery (and all other subsidiary terms of the transaction) take place in the market, given an assumed set of transaction rules (e.g., price-auction market). Finally, in economic research learning is often represented by innovation-adoption models that suggest firms learn through a series of states-of-consciousness (i.e., awareness, interest, intentions and actions). These assertions and proposed causal relationships from economic theory provide the theoretic underpinnings of the proposed model.

Within the specific context of the internationalization process, this model provides a framework for addressing the central research question, i.e., are there identifiable driving forces that can explain why a firm would internationalize its scope of operations? The model answers this question affirmatively, asserting that a firm will internationalize when a decision maker's perceptions about (a) demand from international customers, (b) his/her firm's competitive advantages derived from the transformation of inputs into outputs to meet this demand, and (c) his/her firm's competitive advantages derived from how it conducts transactions in international markets all satisfy the criteria of the firm's operative set of decision rules in a way that motivates a decision maker to participate in international markets.

Although the model has just been presented first in its general form and then in terms of the specific research question, its original development evolved in the opposite direction. The primary objective of the research was to develop a specific model of the internationalization process. As this model was developed, it became evident that the model might be useful for addressing a wide range of issues related to firm behavior. However, this research has a narrow, specific mandate focused on the internationalization process within individual firms. The general model of firm behavior is actually an unintended outcome of the research effort.

The extent to which the general model is applicable to other research settings is both a matter of judgment by peer researchers and possibly the impetus for further empirical testing within contexts other than the study of the internationalization process. For this research, the model proved to be a useful means for framing the analysis of the decisions firms were making over time concerning international markets. As will be discussed in the next section, the empirical evidence from this research provided considerable confirmatory support of the model and suggests that it is an accurate and useful representation of firm behavior, at least within the context of international marketing decisions. If future studies were to experience similar outcomes, then the general model of firm behavior will represent a major contribution to the on-going efforts to explain firm behavior by bridging market-oriented economic theory to firm-oriented management theory.

9.3 Empirical Confirmation of the Proposed Model

Empirical support of the proposed model of the internationalization process has been documented in Chapters 6 through 8. The following provides a summary of these empirical findings, focusing first on conclusions drawn from the case studies, and then on evidence arising from the mail survey.

9.3.1 Findings from Case Studies

In general, the eight case studies supported the theoretic model. The comments from the eight decision makers presented a consistent picture of when international markets are "attractive." Demand must be perceived to exist. The firm's product must have a competitive advantage over rivals (e.g., in terms of the product's distinguishing features, quality, design and/or price). The logistics and costs of the international transaction must not be prohibitive. Further, the findings from the case studies suggest that the opportunities these conditions create, albeit within the context of a set of decision rules (e.g., Will the venture be profitable? Does the venture help us meet our growth objectives?), provide the motivation needed to get the decision maker to act.

However, these results are only preliminary since the decision makers interviewed for the case studies specified demand and competitive advantages somewhat differently, each emphasizing his or her own ideas of what constitutes demand and competitive advantage, and most of the respondents failed to articulate specific decision rules that they consistently use to evaluate all market "opportunities" (although many described a range of decision-rule proxies such as their personal

priorities for their firms and/or the general strategic objectives that their firms had established). These differences across cases may indicate that either firms rely on a range of driving forces and/or decision rules in their choices (beyond or in addition to those proposed by the model), or the differences may indicate that decision makers differ in how they perceive the same market conditions. If either is true, it could explain empirically observed differences in the responses of similar firms to the same international market "opportunities."

Specific examples of how the case studies supported the proposed model include observations related to all four of the proposed necessary and sufficient conditions (i.e., the three driving forces and the operative decision rules).

Concerning demand:

- * A belief that *latent*, and as of yet undeveloped and untapped, demand exists in an international market is associated with the decision to internationalize;
- * Since the quality of unsolicited sales inquiries vary considerably in terms of actual sales potential, decision makers must make judgments about the actual sales potential of perceived market opportunities.
Hence, *perceived effective* demand is associated with the decision to internationalize;
- * Strong domestic demand is negatively associated with the decision to internationalize, implying that *relative* demand, in terms of demand in

local (U.S.) markets relative to demand in international markets, is associated with the decision to internationalize.

Concerning competitive advantages in transacting:

- * Logistics (e.g., translating labels into a second language, sales by Letters of Credit, paperwork associated with Customs) had little to no influence on a firm's decision to internationalize;
- * The strategic creation of competitive advantage through transacting is associated with both the initial decision to internationalize and the firm's ability to sustain their market presence once the internationalization commitment is made. Of particular importance is the ability to use a variety of contractual agreements to (a) gain access to targeted international markets, (b) contain the overall costs of delivering the product to the market so that final prices are not raised to prohibitive, non-competitive levels, and (c) establish long-term relationships that can increase the trust shared between buyer and seller, and thus lower the financial costs of negotiating and enforcing contracts.

Concerning competitive advantages in transforming:

- * A perception that the firm's product has a competitive advantage resulting from its design and/or features is positively associated with the decision to internationalize *when* this advantage is perceived to exist in a targeted international market;

- * A perception that the competitive advantage from the product's design and/or features only existed in domestic markets is negatively associated with the decision to internationalize;
- * The cultural "neutrality" of a product influences a firm's decision to internationalize. Firms marketing products that readily transfer beyond their original cultural setting are more likely to internationalize (e.g., machine manufacturers) than firms with products that have strong cultural ties (e.g., processed food manufacturers).

Concerning operative decision rules:

- * Decision makers employ a range of decision rules, not just profit maximization. With smaller, privately held firms, the ramifications of a business decision on the decision maker's personal, "off the clock" time often is factored into the business decision. However, firms that placed greater emphasis on increasing profits and/or "growing the firm" tended to be involved in international markets.

9.3.2 Findings from the Mail Survey

An *a priori* assumption supporting the proposed model of the internationalization process is that there are at least some agri-food firms that are internationalized. Although anecdotal evidence at the start of this research suggested that this was true, one of the most fundamental conclusions from the mail survey is the confirmation of this assertion on a more representative and larger scale. The

survey results indicate that there is a relatively small but growing number of firms active in export markets. Of the 541 firms in the survey's target population, 242 were successfully contacted by post and/or telephone. Of the 242 firms, 31% were currently exporting their products ($n=75$). An additional 5% of the firms indicated that they had exported in the past but were now focusing more on U.S. markets ($n=11$). Another 19% of the firms indicated that they were curious about export markets, even though they had not yet started exporting ($n=45$).

As noted above, 112 completed surveys were returned. Analyses of the data base generated by these returned surveys consisted of cross-tabulations, a qualitative assessment of responses to a set of open-ended questions about entering and exiting export markets, a maximum likelihood logistic regression model using variables derived directly from survey questions, factor analysis of survey responses, and a second maximum likelihood logistic regression model using factor scores from factor analysis as the independent variables of the regression model. Conclusions derived from each of these analyses support the proposed model of the internationalization process.

Cross-tabulations indicate that there are clear differences between exporters and non-exporters, and that these differences are manifested in all facets of the proposed driving forces of the internationalization process. Exporters and non-exporters respond differently in how they differentiate their product, and larger firms tended to be exporters (both proxies for competitive advantages in transforming). Exporters and non-exporters also differed in their self-assessments of how well they

would/can manage international transactions (a proxy for competitive advantages in transacting), in their assessments of the potential of export markets (a proxy for perceived demand for the firm's products), and in the decision makers' exposure to broader market experiences in both the U.S. and abroad (proxies for the decision makers' priorities for their firms, the supporting decision rules associated with the chosen priorities and the subsequent motivations influencing the choices being made).

The qualitative analysis of the responses to the survey's open-ended questions provided further confirmation of the proposed model. Using their own words and at complete liberty to identify what they considered most relevant to their own decisions about exporting, the respondents listed essentially the same set of general issues and concerns as would be the case if the proposed driving forces are, in fact, central to the decision to internationalize.

The conclusions from the logistic regression suggest that the probability that a given firm exports can be represented by a parsimonious model with four independent variables: the internationalization status of the firm's customers (i.e., Are the firm's customers exporting?), the classification of the firm by number of employees (i.e., Does the firm have less than 25, or 25 or more full time employees?), the frequency the firm receives unsolicited sales inquiries from abroad (Does the firm *never*, *occasionally*, or *often* receive these orders?), and the decision maker's perceptions about whether or not transacting in international markets *would be/is* a problem with international sales. These four independent variables proved to be "good" predictors of a given firm's non-export/export status.

The four variables also are related to the proposed four driving forces, and the degree to which each of these relationships can be established is an indication of the usefulness of each variable for empirically testing the proposed conceptual model of internationalization (i.e., the more closely/obviously the independent variables are related to the driving forces, the better they can be used as proxies to empirically assess the hypothesized process underlying internationalization). The internationalization status of a firm's customers is one indication of the frequency a given firm is exposed to alternative markets. It is also an indication of the probability that the firm will have an opportunity to "ride a customer's coat-tails" into an international market--an internationalization strategy used by two of the case study firms. A firm wishing to maintain its status as the exclusive supplier of a customer will begin exporting to the customer's international subsidiaries. Hence, a decision rule--protect the firm's status as an exclusive supplier--can motivate a firm to internationalize. Similarly, the size of the firm is an indication of both the firm's ability to produce enough product to service a larger market (ranging in breadth from local to global) and to capture economies of scale in production (one source of transformation advantage). And, the frequency a given firm receives unsolicited orders is one indication of a decision maker's perceptions about demand in international markets--the more often a decision maker receives sales inquiries from abroad, the more likely he/she will develop the perception that there is demand for the firm's products in international markets. Finally, assessing the decision maker's perceptions about the problematic nature of international sales provides a measure of

the decision maker's perceptions about his/her firm's competitive advantages (or lack thereof) in managing the transaction costs of international sales.

In these ways, the four variables of the logistic regression are proxies for the firm's motivations, perceived competitive advantages in transforming, perceived demand, and perceived competitive advantages in transacting, respectively. In other words, the four variables are proxies, though imperfect proxies, for the model's four driving forces.

The conclusions from the factor analysis suggests that there are six underlying common factors that can explain a firm's choice about whether or not to export. These six factors have large loadings for sets of questions that focus on transaction costs, demand, transformation costs, motivations, product quality, and customer relations, respectively. By figuratively grouping similar factors (i.e., the two factors that represent transaction costs and customer relations, and the two factors that represent transformation costs and product quality), the six factors collapse to a four "component" model that is very similar in basic structure to the proposed theoretic model of the internationalization process.

The maximum likelihood logistic regression model that uses scores from the factor analysis substantiates this observation. The factor regression model's predictive accuracy and robustness is comparable to the base logistic regression model, and it incorporates a much broader set of input data from the mail survey. Thus, the six factor model provides a more comprehensive specification of the critical indicators of

a firm's propensity to internationalize. Further, this specification readily meshes with the research's proposed general theoretic model of the internationalization process.

9.3.3 General Conclusions

Summarizing the overall conclusions of the case studies, mail survey and subsequent analyses, the main points from the empirical research are:

- * A growing number of Michigan-based, smaller agribusiness and food firms are becoming interested in international markets, a subset of which are already involved in exporting their products.
- * Product type, firm size, *a priori* international experiences and skills of the decision maker (e.g., international travel, fluency in a second language), and the physical or "psychic" distance of the targeted market (e.g., "nearest neighbor") are correlated with the decision to export. However, contrary to prior research, this empirical work identified cases that proved that none of these factors are *necessary* conditions for internationalization to occur. As Popper might say, there are plenty of black swans in the "pool" of data.
- * Examples exist that indicate firms can (and do) choose to exit international markets even when they have been "successful" in implementing past decisions to enter and compete in international markets. And overall, decisions to enter or exit international markets are reversible and depend upon an iterative dynamic process that

involves learning and assessing export decisions within the context of the overall priorities and activities of the firm.

- * As a general rule, strategic issues, not logistic ones, act as barriers to international markets (e.g., knowing "how to compete" in a market verses translating a product label into a second language).
- * Firms that choose to internationalize generally do so because the activity is perceived to be profitable *at an acceptable level*, but *profit maximization* is not a determining objective. If anything, most exporters would contend that a primary focus on short-run profit maximization would have been a detriment to their decisions to enter international markets.
- * The conceptual model provides an alternative framework for analyzing export decisions that is representative of how decision makers assess their market opportunities--rather than focusing on the idiosyncracies of decision makers, the characteristics of the firm and/or the status of the market environment, the focus is on the underlying reasons why these three sets of variables might matter, that is, decisions are made in terms of perceptions about demand and the firm's ability to competitively supply this demand.

9.4 Prescriptive Synthesis

The following section is a prescriptive synthesis of the practical implications of the research's findings for firm managers and policy planners. The chapter

concludes with suggestions for future research that would build upon what has been documented in the preceding eight chapters.

Prescriptions for Managers: Managers of smaller, agribusiness and food firms can use these findings to help them make more informed decisions about international marketing (e.g., how best to respond to unsolicited sales inquiries from abroad). The findings indicate that the internationalization process is driven by a limited number of independent determinants--namely demand, competitive advantages and operative decision rules specific to the firm. If a manager would like to begin exporting, these findings suggest that attention must first focus on these determinants.

For example, with an unsolicited order, the manager should attempt to assess the sales potential of both the inquiring buyer and the latent market potential of that buyer's domestic market. Will the sale be a one-time event or will it evolve into recurring orders? In order to spread the costs of learning to export to a particular country, does the potential to develop a broader client base exist in that country? Along with these demand issues, the manager needs to assess his/her firm's ability to create and sustain competitive advantages in these markets. Determining why the potential buyer is soliciting a foreign supplier and what product characteristics specific to the manager's products led to the unsolicited sales inquiry can be means for assessing potential competitive advantages in transformation. Identifying other Michigan firms that have exported to the potential buyer's country and the type of contractual agreements with which the buyer is familiar can be means for assessing potential competitive advantages in transacting. Finally, the manager should assess

how well the potential sales fit with the overall objectives of the firm, that is, does filling the export sale meet the objectives and performance criteria used by the manager? After all, not all sales are the same.

If a manager would like to sustain export activities already initiated, these findings suggest that efforts should focus on maintaining and enhancing the firm's competitive advantages in its targeted international markets. Examples of these types of strategies include: (1) using the established "beachhead" to gain the confidence of other potential customers (a machine that is "up and running" or a food product that can be tasted in-country is a much more competitive sales message than a catalog picture with a written description), (2) building on lessons learned about what types of contractual agreements work within a given market's context as contracts are negotiated with new customers, and (3) continuing to "ride the coat-tails" of domestic customers who are expanding their international presence as a way of entering additional export markets.

Further, competitive advantages in both transformation and transacting can be eroded by competitors who mimic a successful firm's efforts, or destroyed by a change in government policies. Consequently, contingency plans and risk management strategies should be designed to anticipate and diffuse such changes.

Policy Prescriptions: Policy planners in Michigan can use these findings to gain a greater understanding of the role of international marketing relative to both the current status and future potential of the state's agribusiness and food industries.

These findings suggest that a small but growing number of these agri-food firms are

exporting their products. However, these findings also suggest that policy prescriptions that assert *all* firms should start exporting are ill-advised since exporting is not sustainable without specific conditions in place.

At the federal- and state-level, policies can facilitate the creation of competitive advantages in both transformation and transacting, relative to producers in other states, other exporting countries and the home countries of targeted export markets. Likewise, policies and programs can be implemented that enhance both demand for products and an awareness of this demand. A very limited set of specific examples include:

- * Government agencies as information clearing houses: Of particular importance would be efforts to link companies who are considering exporting to a given country with other companies that have already done business there. An additional need exists for helping coordinate information flows through a subsector's vertical chain of companies. If one company of a vertical chain has already internationalized, opportunities exist for that company's suppliers and customers to follow it into these new markets.
- * Export Enhancement Programs: EEPs that target smaller firms would encourage them to develop demand in international markets and sustain these smaller firms during start-up periods as they create a client-base with enough "critical mass" to make exporting economically viable. Large corporations have the "deep pockets" to sustain such efforts,

unlike smaller firms. But as a rule, smaller firms are not publicly-held, and consequently, are less sensitive to expectations for short-run (i.e., quarterly) profits (i.e., they have a competitive advantage with their operative decision rules). Further, smaller firms need less absolute sales volume to create the needed critical mass--any given level of sales will comprise a larger portion of total sales for a smaller firm relative a larger firm.

- * **Patent protection:** At the federal-level, aggressive pursuit of patent protection in the international community would help protect a company's competitive advantages in transformation.
- * **Incentives for consolidators:** Consolidators who supply the commissaries of U.S. diplomatic communities overseas are already exporting, albeit to a known (and in some ways, captured) demand. Policies could be structured that encouraged (even subsidized) these marketers to take advantage of economies of scale and ship additional goods overseas for the explicit purpose of being sold to general public markets in host countries.
- * **Marketing orders:** Structure diversion credit for exports within the context of federal marketing orders to create a price advantage for U.S. exporters.
- * **Training Programs:** Support education efforts to train managers of smaller firms in how to assess the three driving forces within the

context of their firms, and to formulate strategies and tactics for an expanding, more international marketplace.

Suggestions for Future Research: Researchers, in planning the "next step" to follow this research, should consider four lines of inquiry. First, replication of this study under similar conditions is needed to test how robust this model is. For example, researchers should conduct a study of agri-food firms in another state in the Great Lakes region that follows the same basic protocol documented here, using the proposed model of the internationalization process to frame the research.

Second, the current research could be extended to incorporate a broader analysis of the proposed model. The findings in this document are based on research that was limited to in-depth analysis of the choice sets, decision-making processes and the opportunity sets of the firms in the target population. Analysis of other model components is still needed (e.g., an analysis of the outcome sets, and transacting and learning processes of the targeted firms), as well as a more comprehensive synthesis of the entire model in terms of how firms internationalize.

Third, the conceptual model and the empirical research both highlighted the differences between perceptions and the "true" state of the world, particularly in terms of the three driving forces. However, consideration of any "gaps" between what is perceived and what exists was limited to assessments about how these gaps (i.e., accuracy of perception) would influence the decision making process. A subject area for future research would be to assess how export "performance" (however specified) is linked to the accuracy of perceptions about demand and the firms

competitive advantages in transformation and transacting. For example, is the accuracy of perceptions the major determinant of export performance?

Fourth, one of the outcomes of this research is a hypothesized general model of firm behavior. Since this general model has only been tested within the context of the internationalization process, other research applications focusing on firm behavior should be examined within the framework of the proposed model (e.g., the decision to build a new plant, vertically integrate a production process, diversify the company's holdings). Such broader applications can be used to test and refine the general model.

Efforts in these four areas should enhance the overall understanding of firm behavior and improve the research community's ability to link together market-oriented economic theories and firm-oriented management theories.

APPENDICES

APPENDIX A

APPENDIX A

**Table A1 Key to Standard Industry Classifications (SICs) by
Industry Number and Name, and Population Counts by
SIC in Dun & Bradstreet Data Base¹**

Major Industry Group, Industry Number & Corresponding Name		Number of Mailing Addresses
Agricultural Services		
0722	Crop harvesting, primarily by machine	12
0723	Crop preparation services	91
0761	Farm labor contractors	5
0762	Farm management services	9
Food & Kindred Products		
2011	Meat packing plants	78
2013	Sausages & other prepared meats	53
2015	Poultry slaughtering & processing	8
2021	Creamery butter	3
2022	Cheese: natural & processed	13
2023	Dry, condensed, evaporated products	7
2024	Ice cream and frozen desserts	27
2026	Fluid milk	26
2032	Canned Specialties	15
2033	Canned fruits & vegetables	56
2034	Dehydrated fruits, vegetables, soups	3

¹Major Groups, Industry Numbers & Names are from the SIC Manual of the Office of Management & Budget, Executive Branch, U.S. Government. Information from data base was purchased and is copy-righted by Dun & Bradstreet.

Table A1 (con't).

Major Industry Group, Industry Number & Corresponding Name	Number of Mailing Addresses
Food & Kindred Products, con't.	
2035 Pickles, sauces & salad dressings	35
2037 Frozen fruits and vegetables	21
2038 Other frozen specialties	28
2041 Flour and other grain mill products	9
2043 Cereal breakfast foods	10
2045 Prepared flour mixes and dough	8
2046 Wet corn milling	1
2047 Dog and cat food	6
2048 Other prepared feeds	21
2051 Bread, cake and related products	125
2052 Cookies and crackers	19
2053 Frozen bakery products, except bread	6
2063 Beet sugar	5
2068 Salted and roasted nuts and seeds	6
2075 Soybean oil mills	3
2076 Other vegetable oil mills	1
2077 Animal and marine fats and oils	6
2079 Edible fats and oils	2
2084 Wine, brandy and brandy spirits	15
2096 Potato chips and similar snacks	17
2098 Macaroni and spaghetti	8
2099 Other food preparations	113

Table A1 (cont'd).

Major Industry Group, Industry Number & Corresponding Name	Number of Mailing Addresses
Chemical & Allied Products	
2873 Nitrogen fertilizers	4
2874 Phosphate fertilizers	4
2879 Other agricultural chemicals	22
Leather & Leather Products	
3111 Leather tanning and finishing	16
Machine (non-electric) Manufacturing	
3523 Farm machinery and equipment	66
3556 Food products machinery	32
Wholesale trade -- Durable Goods	
5083 Farm and garden machinery	524
Wholesale trade -- Nondurable Goods	
5141 Groceries, general line	387
5142 Packaged frozen goods	89
5143 Dairy products, except dried/canned	166
5144 Poultry and poultry products	52
5147 Meats and meat products	232
5148 Fresh fruits and vegetables	248
5149 Other groceries & related products	614
5153 Grain and field beans	214
5154 Livestock	68
5159 Other farm-product raw materials	24
5191 Farm supplies	654

APPENDIX B

APPENDIX B**Exhibit B.1****Sample: Letter of Introduction for Case Studies****[Date]****[Address]****Dear [CEO's or Marketing Manager's Name]:**

The Michigan Agricultural Experiment Station is in the process of assessing the status and potential of Michigan's agricultural sector. Goals of this project include the development of new strategies for strengthening Michigan's agri-food economy, and new educational and research programs that will directly benefit managers like you.

As part of this project, we are conducting on-site interviews with a limited number of agri-food [manufacturers/processors]. Your firm has been selected out of a sample of state-based [manufacturers/processors] from throughout Michigan. This letter is designed to introduce our project to you and to ask if you would be willing to be a part of this study.

The interview would be done at your convenience and at your office, and would last approximately one and a half hours. During this time, we would discuss a set of general questions about your firm's market selection and development processes. Examples of the types of questions we want to ask are enclosed with this letter. Any information which you would share with us would remain absolutely confidential, and only aggregated data will be released to the public through university publications.

We realize that your time is valuable and we emphasize that being a part of this study is strictly voluntary. However, our ability here at MSU to serve you and other agri-food businesses in our State depends upon your generosity and cooperation. By gaining a greater understanding of the industry, we believe that we can more effectively contribute to the industry's future.

We will be contacting you by telephone within the next ten days. At that time, we will answer any questions you may have about our project, ask if you would be willing to be interviewed, and if so, set an appointment time.

Thank you for your consideration,

H. Christopher Peterson
Associate Professor

James A. Sterns
Graduate Research Assistant

Enclosure, Letter of Introduction

Sample Interview Questions

**Study of Agri-food Businesses and Their Marketing Practices
Department of Agricultural Economics, MSU**

**As part of the Status & Potential of Michigan Agriculture Project
The Michigan Agricultural Experiment Station**

1. How do you identify marketing opportunities? Are markets chosen because of existing demand? Or, are markets chosen and then demand created/developed within those markets? Which comes first: the chicken (market selection) or the egg (demand)?
2. Again, which comes first? Are markets selected and then you answer the question, how can we compete in this market? Or, do you first identify your firm's competitive advantages and then choose only those markets where you have these advantages over your competitors?
3. Do regulations, laws, tariffs, etc., eliminate some markets from consideration for market selection and development? Which regulations are particularly limiting? Which markets are particularly difficult to enter due to regulatory constraints?
4. How does information availability influence market screening and selection? If there are only three things that you can know about a marketing opportunity, what three would you select?
5. Describe an "ideal" market opportunity? How close does a given market opportunity have to be to this ideal before you decide to pursue it? How are marketing opportunities "discovered"?
6. Assume that one of your employees proposes that your firm begins marketing one of its products to the Ukraine. Talk through (verbalize) your assessment of this proposal. What questions would you ask this employee? What answers will convince you to support this market expansion?

Exhibit B.2

Sample: Confirmation Letter for Case Study Site Visit

[Date]

[Name of Decision Maker to be Interviewed]

[Company Name]

[Street Address]

[City, ST, Zip]

Dear [Name]:

Thank you for agreeing to visit with me about your firm's marketing practices. My understanding from our telephone conversation on the [Date] is that I can meet with you on [Day, date] at [Time] at your office in [City]. If this is incorrect or if you need to reschedule the meeting, please contact me at your earliest convenience at my office phone number, 517-353-5320, by fax at 517-432-1800, or over the weekend at my home number, 517-337-0007. Alternatively, if you use electronic mail, I can be reached at the following address: sternsja@student.msu.edu.

I look forward to meeting with you, and greatly appreciate your willingness to be a participant in our study.

Sincerely,

James A. Sterns
Graduate Research Assistant

Exhibit B.3

Interview Consent Statement

**Study of Agri-Food Industry Firms and Their Marketing Practices
Department of Agricultural Economics, Michigan State University**

**As part of the Status & Potential of Michigan Agriculture Project
The Michigan Agricultural Experiment Station**

This interview is intended to last for 1 hour to 1 1/2 hours, depending on your availability. Obviously, your participation is voluntary, and you are free to decline to answer any of my questions and you can discontinue the interview at any time. Your participation is appreciated and if you happen to have any questions or concerns after I leave, please contact me or Dr. Chris Peterson, the professor overseeing this research at the numbers on these business cards.

With your permission, I would like to record this session on a tape recorder. If you would prefer, I will simply take hand-written notes. The recorder is strictly intended to facilitate my note-taking.

We wish to assure you that strict confidentiality will be enforced throughout this project. Aside from myself, Dr. Chris Peterson, and his secretary, no one will have access to any of the interview notes [or tape recordings]. All research findings will be presented in summary form and no published information will associate responses with particular respondents. Neither you nor your firm will be identified by name.

The objective of this interview is to gain some understanding of how decisions are made within your firm. We are particularly interested in decisions related to your firm's marketing scope and the choices you have made concerning which markets to compete in. We are interested in what types of information are critical to market selection and what, if any, "rules of thumb" or other general guidelines are used by your firm. I am most interested in understanding why and how a particular firm, and in this case, your firm has chosen its current marketing scope. What information is critical? What incentives does your firm find particularly motivating? What "pieces of the puzzle" have to be in place before a given market is considered?

Exhibit B.4**Interview Guide for Case Studies, Page 1****General Background (Screening)**

The first step in this interview is a brief set of general questions about your firm. These questions are intended to give some general background about your firm which will facilitate my analysis of the interviews.

1. Does your firm have more or less than 150 employees?
Follow up asking for the exact number, if willing to volunteer this information.
2. Does your firm have more or less than \$150 million in annual gross sales?
Again, follow up for exact number, if possible.
3. Which of these four categories best fits your firm?
 - a. Exclusively a domestically-oriented firm
 - b. New entrant to foreign markets
 - c. Experienced foreign marketer
 - d. Former participant in foreign markets
4. Which of these five best describes your firm?
 - a. We have never marketed our product to a foreign country, and have no plans to do so in the immediate future. **[go to page 3]**
 - b. We have plans in place to begin marketing overseas within the next 12 months **[go to page 4]**
 - c. We began marketing overseas within the past two years. **[go to page 4]**
 - d. We have been marketing our product overseas for over two years **[go to page 5]**
 - e. Although we once did, we no longer market internationally **[go to page 6]**

Interview Guide, continued**Page 2 for Domestically-oriented firm (never marketed or sold internationally)**

How are decisions about market selection made within your firm? How are these decisions updated?

Describe an "ideal" market? How close does a given market opportunity have to be to this ideal before you begin marketing to it? How are market opportunities "discovered"?

What information is critical to market selection and development? Does market information, or the lack of it, act as a constraint? How is market information updated?

Where is there demand for your product? Who buys products similar to what you manufacture? How do you assess demand? How do you know that demand exists?

Could there be demand for your product in international markets? Would it matter if there was? What else is important for choosing a market?

Pretend that I'm your employee, and I am in your office today to propose that our firm starts marketing one of our products to the Ukraine. Could you talk through (verbalize) your assessment process of this proposal? What questions will you ask me? What answers will convince you to support this market expansion?

In general terms, is there anything unique (vis-a-vis your competitors) about your firm's operating procedures (e.g., production, sales, finance, personnel)? In what ways do your operating procedures give you an edge in the market? How broadly does this edge cut? Regionally? Nationally? Globally?

Who are your main competitors? What's their edge? Is it operations-based? Or something else?

Are the markets in which you compete heavily regulated? Can you think of regulations, and/or government policies which diminish your competitiveness? Which enhance your competitiveness?

Do regulations or other constraints keep you out of some markets? Which constraints? Which markets?

Interview Guide, continued**Page 2 for New Entrants (began international sales within the past 3 years)**

How did you reach the decision to begin foreign marketing at this time? How will this decision be monitored and evaluated as the decision is implemented over time?

Where did the idea to market internationally come from? How was the idea developed within the firm? What are your criteria for implementing and/or rejecting an idea? This idea?

What information was critical for selecting and developing this market opportunity? Does market information, or the lack of it, act as a constraint as you begin to market internationally? How will market information be updated?

Where is there demand for your product? Who buys products similar to what you manufacture? How do you assess demand? How do you know that demand exists in the foreign markets you are entering?

Aside from demand for your product, what else was important for choosing a foreign market? What other factors enter the decision process?

Pretend that I'm your employee, and I am in your office today to propose that our firm starts marketing one of our products to the Ukraine. Could you talk through (verbalize) your assessment process of this proposal? What questions will you ask me? What answers will convince you to support this market expansion?

In general terms, is there anything unique (vis-a-vis your competitors) about your operating procedures (e.g., production, sales, finance, personnel)? In what ways do your operating procedures give you an edge in the market? How broadly does this edge cut? Regionally? Nationally? Globally?

Who are your main competitors? What's their edge? Is it operations-based? Or something else?

Are the markets in which you compete heavily regulated? Can you think of regulations, and/or government policies which diminish your competitiveness in the foreign markets that you are now entering? Which enhance your competitiveness?

Do regulations or other constraints keep you out of some international markets? Which constraints? Which markets?

Interview Guide, continued**Page 2 for Experienced, Active International Firm**

What's the history of how your firm began marketing internationally? How have your international marketing activities grown over time? How have they evolved? What have you learned over time about international marketing?

Do you recall where the idea to market internationally came from? How was the idea developed within the firm? Are you currently looking for new foreign markets? How are these ideas initiated and implemented?

What information is critical in identifying, screening and maintaining international market opportunities? Does market information, or the lack of it, act as a constraint as you market internationally? How do you monitor and update critical information?

Where is there demand for your product? Who buys products similar to what you manufacture/process? How do you assess demand? How did you discover demand for your products in foreign markets?

Aside from demand for your product, what else is important when choosing a foreign market? What other factors enter the decision process?

Pretend that I'm your employee, and I am in your office today to propose that our firm starts marketing one of our products to the Ukraine. Could you talk through (verbalize) your assessment process of this proposal? What questions will you ask me? What answers will convince you to support this market expansion?

In general terms, is there anything unique (vis-a-vis your competitors) about your operating procedures (e.g., production, sales, finance, personnel)? In what ways do your operating procedures give you an edge in the market? How broadly does this edge cut? Regionally? Nationally? Globally?

Who are your main competitors? What's their edge? Is it operations-based? Or something else?

Are the markets in which you compete heavily regulated? Can you think of regulations, and/or government policies which diminish your competitiveness in the foreign markets that you are now competing in? Which enhance your competitiveness?

Do regulations or other constraints keep you out of some international markets? Which constraints? Which markets?

Interview Guide, continued**Page 2 for Former Participant in Foreign Markets**

How are decisions about market selection made within your firm? How are these decisions updated?

Describe an "ideal" market? How close does a given market opportunity have to be to this ideal before you begin marketing to it? How are market opportunities "discovered"?

What information is critical to market selection and development? Does market information, or the lack of it, act as a constraint? How is market information updated?

Where is there demand for your product? Who buys products similar to what you manufacture? How do you assess demand? How do you know that demand exists? Could there be demand for your product in international markets? Would it matter if there was? What else is important for choosing a market?

What's the history of how your firm first entered foreign markets and then later abandoned these endeavors? What initiated your efforts to market internationally? What did you learn from your efforts? How were these "lessons learned" incorporated into the decision to end international marketing efforts?

Do you recall where the idea to market internationally came from? How was the idea developed within the firm? Are you currently considering re-entering foreign markets?

What market information did you consider absolutely essential when you began marketing internationally? Did this prove to be the case? In other words, as you marketed internationally, what market information did you find to be absolutely essential?

Aside from demand for your product, what else is important when choosing a foreign market? From your experiences, what other factors should enter any decision process to internationalize a firm's marketing scope? What advice would you give?

Interview Guide, continued

Page 3 for Former Participant in Foreign Markets

Pretend that I'm your employee, and I am in your office today to propose that our firm starts marketing one of our products to the Ukraine. Could you talk through (verbalize) your assessment process of this proposal? What questions will you ask me? What answers will convince you to support this market expansion?

In general terms, is there anything unique (vis-a-vis your competitors) about your operating procedures (e.g., production, sales, finance, personnel)? In what ways do your operating procedures give you an edge in the market? How broadly does this edge cut? Regionally? Nationally? Globally?

Who are your main competitors? What's their edge? Is it operations-based? Or something else?

Are the markets in which you compete heavily regulated? Can you think of regulations, and/or government policies which diminished your competitiveness in the foreign markets that you were competing in? Which enhanced your competitiveness?

Do regulations or other constraints currently keep you out of some international markets? Which constraints? Which markets?

APPENDIX C

APPENDIX C

Exhibit C.1

Sample: Letter of Introduction for Screening Post Card

[Date]

[Company Name]

[Street Address]

[City, State, Zip]

Dear Colleague,

In the wake of rapidly evolving agri-food markets, including trends towards globalization and increased competition, businesses and policy makers are asking for our help. Our common goal is to prepare Michigan's agricultural and food industries for doing business in this new and ever-changing environment.

We need your help. We are developing a mailing list for a study about how to help agri-food businesses adapt to today's changing markets. Your company is one of 600 firms in Michigan that we may want to survey by mail.

At this moment, we are asking for two minutes of your time: one minute to read this letter and a second minute to fill out and return the self-addressed, stamped postcard we've enclosed. If at all possible, we would appreciate having the postcard returned by January 26, 1996.

Your contribution of time and effort will greatly facilitate our work and could help us provide you with valuable market and sales information. And we guarantee that any information you share with us will be treated as strictly confidential. We will not distribute the mailing list compiled from this work to any other party, and the information from the one screening question about your business' sales and marketing efforts will not be seen by anyone other than the immediate research team (myself, my secretary, and the graduate student working with me on this project).

Thank you for your cooperation.

Sincerely,

Dr. Chris Peterson

Associate Professor and Project Director

telephone: (517) 355-1813

fax: (517) 432-1800

Enclosure: Self-addressed, stamped postcard

Exhibit C.2**Sample: Addressed, postage-paid Return Postcard**

Please check the box next to the statement most accurately describing your company's sales experience:

- ☐ Domestic U.S. markets and sales have always been our sole focus
- ☐ Curious about exporting, even though we haven't exported anything yet
- ☐ New to exporting; began exporting within the past 3 years
- ☐ Experienced, active exporter; exports are less than 10% of total sales
- ☐ Experienced, active exporter; exports are more than 10% of total sales
- ☐ Withdrawing from exports; may still export but refocused to U.S. sales
- ☐ Former exporter; we have completely abandoned export sales

Who in your company is primarily responsible for sales & marketing?

Name/position:

Company:

Address:

City/ST/Zip:

Exhibit C.3**Sample: Letter Requesting Participation in Questionnaire Pre-Test**

[Date]

[company name]

[company address]

Dear Mr. [name]:

Six months have passed since we last contacted you about our research assessing the status and potential of Michigan's agriculture and food industries. We have made considerable progress since then, in part because of your cooperation and willingness to be interviewed last summer.

The current phase of our research is focused on preparing a large-scale mail survey to be distributed to 300 Michigan agri-food companies. A draft copy of this survey is included with this letter. Once again, we are asking for your help.

Our objective is to make the survey as effective as possible. To do so, we believe that it is imperative to have several individuals from agri-food companies critique and review our draft questionnaire.

We realize that your time is valuable, and we want to minimize any inconvenience this request may cause. We are asking for a few moments of your time to review the attached document. Our primary concerns are whether or not the questionnaire contains any of the following:

- * Unfamiliar or unclear terminology
- * Questions that managers will be uncomfortable and/or unwilling to answer
- * Unclear instructions on how to answer a question
- * Frivolous or irrelevant questions that have little meaning to managers.

We truly value your opinions, and if you do have the opportunity to review the document, we would ask that you return your comments to us in any of the following ways:

- * Write your comments directly onto the draft questionnaire and then either return it to us in the stamped, addressed envelope included with this letter or fax it to us at 517-432-1800
- * Wait for us to telephone you and relay your comments to us over the telephone. We would contact you the week of January 22-26.

We most sincerely thank you for the support and cooperation that you have already extended to us. We hope that this latest request does not unduly inconvenience you.

We look forward to your response,

H. Christopher Peterson
Associate Professor

James A. Sterns
Graduate Research Assistant

Exhibit C.4

Sample: Letter of Introduction Accompanying Survey Questionnaire

[Date]

[Job Title]

[Company Name and Address]

Dear [Name]:

We want to thank you for recently returning our postcard about your company's marketing and sales focus. Enclosed you will find the follow-up survey referenced in the original letter that accompanied the postcard.

Again, we need your help. The postcard responses we received indicated that companies are choosing a wide range of strategies in the face of increased globalization of the agricultural and food industries. By examining this range of responses in greater detail, we hope to gain a better understanding of how to help keep the region's agri-food companies competitive in today's evolving markets. But we can't do this without your help. The usefulness of our work depends upon how accurately we are able to describe the choices companies like yours are making today.

Your answers to the survey questions will be kept confidential and used only in combination with the answers of others who complete this survey. To ensure confidentiality, your names and addresses will never be placed on the survey. Simply stated, your privacy is guaranteed. And, you indicate your voluntary agreement to participate in this research project by completing and returning the enclosed survey.

When you have completed the survey, please return it in the self-addressed, stamped envelope. If you would like a free summary of the survey results, please write "copy of the results requested" on the back of the return envelope and print your name and address below it. To ensure privacy, please do not put this information on the questionnaire itself.

If you have any questions about the survey, please do not hesitate to write or call us at the contacts listed below. We would be happy to answer your questions.

Thank you for your participation.

Sincerely,

Dr. Chris Peterson

Associate Professor and Project Director

Telephone: (517) 355-1813; Fax: (517) 432-1800

Enclosure: Questionnaire; self-addressed, stamped envelope

Sample: Questionnaire, Version for Domestically Oriented Firms

Michigan State University

Department of Agricultural Economics

1995/96 Agri-Food Marketing Study



The objective of this Agri-Food Industry Study is to gain a better understanding of how marketing and sales decisions are made in firms like yours. We are particularly interested in (a) documenting the choices you have made about what markets to pursue and (b) identifying what factors influenced these choices.

Your opinions and comments are important to us. Information you provide will be used to develop recommendations for enhancing competitiveness of Michigan agri-food firms and for outreach programming at Michigan State University and beyond.

And please note, any information you share with us will be held in strict confidentiality. Only aggregate responses compiled from all of the returned surveys will be reported outside the immediate research team.

Thank you for your time and effort.

I. Products/Services Profile:

1. From the list below, please check all of the selections that represent your company's products and/or services. Please distinguish between those products/services that are core or major to your company's business and those that are supplemental or minor relative to your core activities.

Your CORE or MAJOR products/services are in what industries?	Your SUPPLEMENTAL or MINOR products and services are in what industries?
---	---

Please check ALL that apply:

a. meat packing	[]	[]
b. sausages/prepared meats	[]	[]
c. natural/processed/imitation cheese	[]	[]
d. canned fruits/vegetables/preserves	[]	[]
e. canned specialties	[]	[]
f. dried/dehydrated fruits/vegetables	[]	[]
g. pickled vegetables/sauces/dressings	[]	[]
h. frozen fruits/juices/vegetables	[]	[]
i. frozen specialties	[]	[]
j. cereal breakfast foods	[]	[]
k. prepared flour mixes/dough	[]	[]
l. bread/bakery products	[]	[]
m. cookies/crackers	[]	[]
n. frozen bakery products	[]	[]
o. wine/brandy/brandy spirits	[]	[]
p. other prepared foods	[]	[]
q. farm machinery/equipment	[]	[]
r. food products/processing machinery	[]	[]
s. other: _____	[]	[]
t. other: _____	[]	[]

The three questions on the following page ask you about your company's core products or service.

Concerning the core and/or central products/services that you identified on the previous page:

2. The following pairs of characteristics represent the opposite ends of a scale. Please circle a number on each line to indicate how you think the majority of your customers would rate your core products/services along each scale's continuum.

a.	lowest priced	1--2--3--4--5	premium priced
b.	easily substituted with market alternatives	1--2--3--4--5	unique among market alternatives
c.	designed for a broad range of customers	1--2--3--4--5	designed for a limited number of specially targeted customers
d.	generic	1--2--3--4--5	customized
e.	familiar, well established design/approach	1--2--3--4--5	innovative, cutting-edge design/approach
f.	basic, standard level of quality	1--2--3--4--5	highest quality available
g.	basic, standard set of features	1--2--3--4--5	best set of features available

3. What percentage of your company's total sales are sales from your core products/services? **[Please check the most appropriate option]**

- ☐ less than 25% of total sales
☐ 25% to 49% of total sales
☐ 50% to 74% of total sales
☐ 75% to 99% to total sales
☐ 100% of total sales

4. Which of the following most accurately describes your core products/services' **most distinguishing** competitive advantage? **[please check only ONE option]**

- ☐ its price/cost advantage
☐ its quality and/or features
☐ its ability to meet the needs/demand of a specific market focus/niche
☐ other: _____

(Please Continue)

5. How many of your firm's products/services (both core and supplemental) are the following? (For example, if all of your products are patent protected but none are copyrighted, then place a check in the "All" column on line 5a. and a check in the "None" column on line 5b.)

	<u>All</u>	<u>Most</u>	<u>Some</u>	<u>None</u>
a. Patent protected?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Copyright protected?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Sold under a brand name?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Registered under a commercial trademark?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

II. Market Profile

- 6a. **U.S. DOMESTIC MARKET:** The following pairs of characteristics (e.g., high/low growth, attractive/unattractive sales opportunities) represent the opposite ends of a scale. Please circle a number on each line below to indicate where along each scale's continuum you would rank the **primary US domestic market** in which your company competes.

a.	high growth	1-2-3-4-5	low growth
b.	attractive sales opportunities	1-2-3-4-5	unattractive sales opportunities
c.	unlimited potential to capture substantial market share	1-2-3-4-5	no potential to capture substantial market share
d.	future demand will far exceed present demand	1-2-3-4-5	future demand is certain to fall well below current demand
e.	potential customers are fully aware of our products/services	1-2-3-4-5	potential customers are completely unaware of our products/services
f.	U.S. demand/sales in clear excess of U.S. supply	1-2-3-4-5	U.S. supply/production capacity in clear excess of U.S. demand

- 6b. **MARKETS OUTSIDE THE U.S.:** The following pairs of characteristics (e.g., high/low growth, attractive/unattractive sales opportunities) represent the opposite ends of a scale. Please circle a number on each line below to indicate where along each scale's continuum you would rank **international marketing and export sales opportunities** for the type(s) of products/services your company offers.

PLEASE NOTE, even if you have never sold your products/services internationally, we are still interested in your opinions and assessments about international markets and export sales.

- | | | | |
|----|--|-----------|---|
| a. | high growth | 1-2-3-4-5 | low growth |
| b. | attractive sales opportunities | 1-2-3-4-5 | unattractive sales opportunities |
| c. | unlimited potential to capture substantial market share | 1-2-3-4-5 | no potential to capture substantial market share |
| d. | future demand will far exceed present demand | 1-2-3-4-5 | future demand is certain to fall well below current demand |
| e. | potential customers are fully aware of our products/services | 1-2-3-4-5 | potential customers are completely unaware of our products/services |
| f. | global demand/sales in clear excess of global supply | 1-2-3-4-5 | Global supply/production capacity in clear excess of global demand |

7. Please check the box next to the statement which most closely matches your company's experiences with **receiving** sales inquiries from individuals or companies outside the U.S.

- [] We have **never** received sales inquiry from companies outside the U.S.
 [] We **occasionally** receive sales inquiries from companies outside the U.S.
 [] We **often** receive sales inquiries from companies outside the U.S.

8. Please check the box next to the statement which most closely matches your company's experiences **soliciting** sales from companies outside the U.S.

- [] We **never** intentionally solicit companies outside the U.S. for sales/sales inquiries.
 [] We **occasionally** solicit companies outside the U.S. for sales/sales inquiries.
 [] We **often** solicit companies outside the U.S. for sales/sales inquiries.

(Please Continue)

III. Sales and Marketing

- 9a. **U.S. DOMESTIC MARKETS:** Using the scale listed below, please circle a number on each line to indicate how much you agree or disagree with each statement about marketing and sales in the U.S.

Scale: 1 = Strongly Agree (SA); 2 = Agree (A); 3 = Neutral (N); 4 = Disagree (D);
5 = Strongly Disagree (SD)

	SA	A	N	D	SD	
a.	1	2	3	4	5	Establishing long-term relationships with customers is an ongoing challenge for my company.
b.	1	2	3	4	5	Specifying terms of payment and writing contracts are major constraints to achieving more sales.
c.	1	2	3	4	5	Collecting payment is often a problem with our sales.
d.	1	2	3	4	5	Negotiating the terms of the sale is one of the most difficult aspects of closing deals and completing sales with our customers.
e.	1	2	3	4	5	The customer going bankrupt and/or defaulting on payments is a common problem in our business.
f.	1	2	3	4	5	Government policies which restrict, impede or prohibit sales are an important concern in our business activities.
g.	1	2	3	4	5	An inability to legally enforce contractual agreements, prevent patent or trademark infringement, and/or product liability are common problems in our business.
h.	1	2	3	4	5	Finding accurate and timely information that would help me identify new and potential customers is difficult.
i.	1	2	3	4	5	Finding accurate and timely information about the credit worthiness of potential customers is difficult.
j.	1	2	3	4	5	Finding accurate and timely information about my company's ability to compete in the market is difficult.

- 9b. **MARKETS OUTSIDE THE U.S.:** Using the scale listed below, please circle a number on each line to indicate how much you agree or disagree with each statement about **INTERNATIONAL** marketing and export sales.

PLEASE NOTE, even if you have never sold your products/services internationally, we are still interested in your assessments about what problems, if any, you anticipate would be true for international markets and export sales.

Scale: 1 = Strongly Agree (SA); 2 = Agree (A); 3 = Neutral (N); 4 = Disagree (D)
5 = Strongly Disagree (SD)

- | | SA | A | N | D | SD | |
|----|----|---|---|---|----|--|
| a. | 1 | 2 | 3 | 4 | 5 | Establishing long-term relationships with customers would be a challenge for my company. |
| b. | 1 | 2 | 3 | 4 | 5 | Specifying terms of payment and writing contracts would be major constraints to achieving international sales. |
| c. | 1 | 2 | 3 | 4 | 5 | Collecting payment would be a problem with international sales. |
| d. | 1 | 2 | 3 | 4 | 5 | Negotiating the terms of the sale would be one of the most difficult aspects of closing deals and completing sales with customers. |
| e. | 1 | 2 | 3 | 4 | 5 | The customer going bankrupt and/or defaulting on payments would be a frequent problem. |
| f. | 1 | 2 | 3 | 4 | 5 | Government policies which restrict, impede or prohibit international sales would be an important concern. |
| g. | 1 | 2 | 3 | 4 | 5 | An inability to legally enforce contractual agreements, prevent patent or trademark infringement, and/or product liability would be common problems. |
| h. | 1 | 2 | 3 | 4 | 5 | Finding accurate and timely information that would help me identify new and potential international customers is the main reason not to export. |
| i. | 1 | 2 | 3 | 4 | 5 | Finding accurate and timely information about the credit worthiness of potential international customers is the main reason not to export. |
| j. | 1 | 2 | 3 | 4 | 5 | Finding accurate and timely information about my company's ability to compete in international market is the main reason not to export. |

(Please Continue)

IV. Company Profile

10. Please check the box next to the statement which most accurately describes your company's attitude towards overall growth, in terms of sustained increases in production capacity and/or sales volume.

- ☐ Growth is a high priority relative to other objectives of our firm.
☐ Growth is a low priority relative to other objectives of our firm.
☐ We are neutral about growth as a priority; our focus is on other objectives.

11. What percentage of your sales are made on credit terms (for example: 30% down, net 45 days)?

- ☐ zero
☐ 1 to 33%
☐ 34 to 66%
☐ 67 to 99%
☐ 100%

- 12a. Which of the following represent sales made by your company within the past five years? [please mark ALL options that are relevant]

- a. ☐ direct sales to end users
b. ☐ sales to retailers
c. ☐ sales to consolidators
d. ☐ sales to distributors
e. ☐ sales to wholesales
f. ☐ sales to partners (e.g., as part of joint ventures, collaborative projects, franchises)
g. ☐ other: _____

- 12b. Which of the following sales contributed the **MOST** to total sales volume? (Check only ONE)

- a. ☐ direct sales to end users
b. ☐ sales to retailers
c. ☐ sales to consolidators
d. ☐ sales to distributors
e. ☐ sales to wholesales
f. ☐ sales to partners (e.g., as part of joint ventures, collaborative projects, franchises)
g. ☐ other: _____

13. Please rank (1 through 4) the classes of competitors listed below, in order of their importance, as sources of competition for your company's core products/services. Mark the number 1 by the most important source, number 2 by the next most important source, and so forth. Please mark "NA" (not applicable) for any class that is not a source of competition for you and exclude it from your rankings.
- ☐ The products/services of smaller sized firms with US-based production
☐ The products/services of large corporations with US-based production
☐ Foreign imports from Mexico and Canada
☐ Foreign imports from countries beyond Mexico and Canada
14. Please check the box next to the statement which most accurately describes your company.
- ☐ Domestic U.S. marketing and sales have always been our sole focus.
☐ New to exporting, having started to export products/services within the last three years.
☐ Experienced, active exporter, having exported products/services for over three years.
☐ Although we have exported in the past, efforts are now refocused back to domestic U.S. markets.
15. By your estimates, what percentage of **YOUR CUSTOMERS** are exporting their products/services?
- ☐ zero
☐ 1 to 33%
☐ 34 to 66%
☐ 67 to 99%
☐ 100%
16. Please check the box (**only one**) next to the statement that most closely matches your opinion about the primary market(s) in which your company competes.
- ☐ U.S. domestic markets and international markets are two very different and distinctly separate markets.
☐ All markets have blended into one; today's market is a global market.

(Please Continue)

Questions 17a. through 17c. ask you for your opinions about international marketing and export sales as compared to marketing and sales in the U.S.

PLEASE NOTE, even if you have never sold your products/services internationally, we are still interested in your opinions and assessments about international markets and export sales.

17a. I believe that (check one):

- ☐ international sales would have a **higher** degree of risk than domestic sales
- ☐ international sales would have a **lower** degree of risk than domestic sales
- ☐ there would be little to **no difference** in the degree of risk between international and domestic sales

17b. I believe that (check one):

- ☐ international sales would be **less** profitable than domestic sales
- ☐ international sales would be **more** profitable than domestic sales
- ☐ there would be little to **no difference** in profitability between international and domestic sales

17c. I believe that (check one):

- ☐ international markets would be **more** competitive than domestic markets
- ☐ international markets would be **less** competitive than domestic markets
- ☐ there would be little to **no difference** in the amount of competition between international and domestic markets.

18. Please check the box next to the statement that most accurately describes your company's average gross **annual** sales for the past three years.

- ☐ less than \$10 million
- ☐ \$10 million to \$49 million
- ☐ \$50 million to \$99 million
- ☐ \$100 million to \$149 million
- ☐ \$150 million to \$500 million
- ☐ more than \$500 million

19. Please check the box next to the statement that most accurately describes your company's average number of **full time** employees over the past three years.

- ☐ less than 25
- ☐ 25 to 100
- ☐ 101 to 150
- ☐ 151 to 500
- ☐ more than 500

20. Please check the box next to the statement that most accurately describes your company's current ownership structure.

☐ sole proprietorship
☐ partnership
☐ privately held corporation
☐ publicly held corporation
☐ corporate subsidiary
☐ cooperative

21. Please check the box next to the statement that most accurately describes your company's current market coverage in terms of geographic range.

☐ local
☐ state-wide
☐ regional, inter-state
☐ national

22. In a brief statement, would you please tell us your opinions about why your company should or should not be involved in international markets and export sales.

You have completed the survey. Your opinion on **each question** is important to the success of this research project. Please put this survey in the self-addressed envelope to send it back to us.

Thank you very much for your cooperation.

Supplemental Questions on Survey Questionnaire for Active Exporters

23. Please check the box next to the statement that most accurately describes your company's current international market coverage in terms of geographic range.
[please check ALL that apply]
- ☐ Mexico
 - ☐ Canada
 - ☐ Europe and/or the former Soviet Union
 - ☐ Pacific Rim and/or South Asia
 - ☐ Central and/or South America (excluding Mexico)
 - ☐ Africa
 - ☐ other: _____
24. Over the past 12 months, approximately what percentage of your firm's total sales have been from exporting?
- ☐ zero
 - ☐ 1 to 33%
 - ☐ 34 to 66%
 - ☐ 67 to 99%
 - ☐ 100%
25. Which of the following were critically important to your decision to begin exporting?
[Please check ALL that apply]
- ☐ Received at least one unsolicited order from a company outside the U.S.
 - ☐ Concluded that there was significant demand for our products/services in foreign markets.
 - ☐ Discovered that we could create demand for our products/services by advertising in internationally distributed trade journals and directories.
 - ☐ Discovered that we could create demand for our products/services by exhibiting at trade shows.
 - ☐ Because of limited opportunities in U.S. markets, decided that our future depended on expanding into international markets.
 - ☐ Believed that our products/services were equal or superior to any other company's, whether the companies were based in the U.S. or otherwise.
 - ☐ Concluded that the costs of marketing and selling our products/services in foreign markets would not be prohibitive nor price us out of those markets.
 - ☐ Believed that international sales would be sufficiently profitable to justify our decision to export.
 - ☐ Believed that international sales would be a good way for our company to diversify.
26. If possible, please list in the space provided the key information, insight, and/or event that was the deciding factor behind your decision to fill your first export order (that is, **THE** factor that pushed you to action)?

Supplemental Questions on Survey Questionnaire for Former Exporters

Note: Questions 23 through 25 were identical to those asked of active exporters. The following two questions were then added to the version of the survey intended for "former exporters."

26. Which of the following were critically important to your decision to reduce and/or stop exporting? [please check ALL that apply]
- ☐ Discovered that there was insufficient demand for our products/services in foreign markets.
 - ☐ Discovered that our products/services could not meet the quality standards and/or consumer expectations for specific features in foreign markets.
 - ☐ Discovered that the costs of marketing and selling our products/services in foreign markets priced us out of the markets.
 - ☐ Discovered that government regulations and import constraints severely limited our ability to compete against local companies.
 - ☐ Discovered that international sales were not sufficiently profitable.
27. If possible, please list in the space provided the key information, insight, and/or event that was the deciding factor behind your decision to scale back and/or stop exporting your products/services (that is, THE factor that caused your change in focus)?

Exhibit C.6

Reminder Postcard Sent Two Weeks after Initial Survey Mailing

[Date]

Dear Survey Participant:

Within the past two weeks, we sent you a questionnaire concerning your company's marketing and sales practices. We've not yet received your response. Please take the time to complete this survey. Your response is very important to us. If you have any questions, or, if you haven't received a survey yet, please call 517-355-1813.

**We extend our most sincere gratitude for your cooperation and support in this endeavor.
Thank you very much.**

Sincerely,

Dr. Chris Peterson	Jim Sterns
Associate Professor	Graduate Assistant
Michigan State University	

Exhibit C.7

**Sample Letter: Follow-Up Letter with Second Copy of Questionnaire
Mailed Three Weeks After Original Mailing**

[Date]

[Job Title]

[Company Name and address]

Dear [Name]:

Approximately three weeks ago, we mailed a questionnaire to you concerning your company's marketing and sales practices. We have not yet received your response. We realize that your time is valuable and that more pressing matters have likely been your priority. We're writing simply to remind you of our request to complete the survey and to include a second copy of the questionnaire for your convenience.

The validity of our research depends on a minimum number of returned surveys. We still need additional completed surveys to reach this goal. We hope that you'll consider completing the questionnaire. And as we stated before, your responses are strictly confidential, and no published document will ever identify you or your company by name.

Thank you for your time and consideration.

Sincerely,

Christopher Peterson, Ph.D.
Associate Professor
Department of Agricultural Economics
Michigan State University

Enclosures: Questionnaire; stamped, self-addressed return envelope

APPENDIX D

APPENDIX D

Initial Statistics for Factor Analysis

Extraction Stage using Principal Axis Factoring (PAF)
 Decision Rule for Number of Factors: Eigenvalues ≥ 1

Variable	Communality	*	Factor	Eigenvalue	Pct of Var	Cum Pct
		*				
Q2A	.29841	*	1	4.83333	21.0	21.0
Q2B	.46739	*	2	3.52480	15.3	36.3
Q2C	.37467	*	3	2.95390	12.8	49.2
Q2D	.46452	*	4	1.69360	7.4	56.5
Q2E	.35505	*	5	1.30610	5.7	62.2
Q2F	.55506	*	6	1.07749	4.7	66.9
Q2G	.63521	*	7	.89138	3.9	70.8
Q6BA	.70435	*	8	.82425	3.6	74.4
Q6BB	.81333	*	9	.75719	3.3	77.7
Q6BC	.76136	*	10	.73954	3.2	80.9
Q6BD	.65668	*	11	.60636	2.6	83.5
Q6BE	.37434	*	12	.55919	2.4	85.9
Q6BF	.46011	*	13	.51000	2.2	88.2
Q7	.48810	*	14	.42959	1.9	90.0
Q9BA	.39791	*	15	.36748	1.6	91.6
Q9BB	.70041	*	16	.36037	1.6	93.2
Q9BC	.71550	*	17	.32476	1.4	94.6
Q9BD	.66833	*	18	.28308	1.2	95.8
Q9BE	.62092	*	19	.24447	1.1	96.9
Q9BF	.44170	*	20	.23544	1.0	97.9
Q9BG	.63182	*	21	.22308	1.0	98.9
Q15	.34226	*	22	.13775	.6	99.5
Q21	.45760	*	23	.11684	.5	100.0

PAF extracted 6 factors. 26 iterations required.

Final Statistics for Factor Analysis with decision rule based on
Eigenvalues > 1:

Variable	Communality	*	Factor	Eigenvalue	Pct of Var	Cum Pct
		*				
Q2A	.24900	*	1	4.48312	19.5	19.5
Q2B	.47855	*	2	3.15200	13.7	33.2
Q2C	.23127	*	3	2.47761	10.8	44.0
Q2D	.49107	*	4	1.25655	5.5	49.4
Q2E	.33963	*	5	.84797	3.7	53.1
Q2F	.73615	*	6	.65613	2.9	56.0
Q2G	.70698	*				
Q6BA	.68607	*				
Q6BB	.80135	*				
Q6BC	.79604	*				
Q6BD	.62614	*				
Q6BE	.52360	*				
Q6BF	.42581	*				
Q7	.53055	*				
Q9BA	.43089	*				
Q9BB	.70394	*				
Q9BC	.74323	*				
Q9BD	.66031	*				
Q9BE	.63822	*				
Q9BF	.42498	*				
Q9BG	.64732	*				
Q15	.34254	*				
Q21	.65974	*				

Rotated Factor Matrix (where VARIMAX converged in 6 iterations) for Factor Analysis based on Eigenvalues > 1 decision rule:

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
Q2A	.15150	-.15243	.40707	-.04672	.18354	.03514
Q2B	.00855	-.12838	.66889	-.01712	.09774	.06882
Q2C	.12388	.08748	.44714	.01602	-.06429	.06286
Q2D	-.09895	.07348	.68541	-.06404	.04471	-.00078
Q2E	-.08244	.03429	.49974	.26522	.09687	.04686
Q2F	-.05596	-.04278	.16985	-.08891	.81644	.16693
Q2G	.02765	-.15707	.57703	.07953	.58481	-.01622
Q68A	-.06878	.80044	.09847	-.17355	-.02486	-.01403
Q68B	-.15692	.84114	.05931	-.19885	.14442	.07277
Q68C	-.09828	.86133	-.15075	-.09428	-.08574	.07432
Q68D	-.03416	.76885	-.05511	-.15935	-.05459	-.04944
Q68E	-.04041	.15685	.12887	-.10262	.12322	.67457
Q68F	.14359	.56835	-.03032	-.04806	-.13560	.24608
Q7	.13179	-.27831	-.14409	.64041	-.00360	-.06948
Q98A	.38893	-.02083	-.07173	-.07034	-.04487	-.51680
Q98B	.78991	.00837	.23499	.11146	-.05713	-.09488
Q98C	.79859	-.04703	.12274	.24873	-.12857	-.09901
Q98D	.79109	-.04379	.11776	.02590	-.05307	-.12330
Q98E	.78284	-.10657	.06667	-.02174	-.04543	.08393
Q98F	.63350	-.00071	-.08832	.01972	.08768	-.08823
Q98G	.74783	-.04904	-.26954	-.01387	.10993	.02721
Q15	.04224	-.23735	.12901	.51662	-.01737	.02428
Q21	.05585	-.09262	.04623	.80125	-.04805	-.03992

Initial Statistics for "Forced-Four" Factor Analysis

Extraction Stage using Principal Axis Factoring (PAF)

Decision Rule for Number of Factors: Fixed at n = 4

Variable	Communality	*	Factor	Eigenvalue	Pct of Var	Cum Pct
		*				
Q2A	.29841	*	1	4.83333	21.0	21.0
Q2B	.46739	*	2	3.52480	15.3	36.3
Q2C	.37467	*	3	2.95390	12.8	49.2
Q2D	.46452	*	4	1.69360	7.4	56.5
Q2E	.35505	*	5	1.30610	5.7	62.2
Q2F	.55506	*	6	1.07749	4.7	66.9
Q2G	.63521	*	7	.89138	3.9	70.8
Q6BA	.70435	*	8	.82425	3.6	74.4
Q6BB	.81333	*	9	.75719	3.3	77.7
Q6BC	.76136	*	10	.73954	3.2	80.9
Q6BD	.65668	*	11	.60636	2.6	83.5
Q6BE	.37434	*	12	.55919	2.4	85.9
Q6BF	.46011	*	13	.51000	2.2	88.2
Q7	.48810	*	14	.42959	1.9	90.0
Q9BA	.39791	*	15	.36748	1.6	91.6
Q9BB	.70041	*	16	.36037	1.6	93.2
Q9BC	.71550	*	17	.32476	1.4	94.6
Q9BD	.66833	*	18	.28308	1.2	95.8
Q9BE	.62092	*	19	.24447	1.1	96.9
Q9BF	.44170	*	20	.23544	1.0	97.9
Q9BG	.63182	*	21	.22308	1.0	98.9
Q15	.34226	*	22	.13775	.6	99.5
Q21	.45760	*	23	.11684	.5	100.0

PAF extracted 4 factors. 13 iterations required.

Final Statistics for Forced-Four Factor Analysis:

Variable	Communality	*	Factor	Eigenvalue	Pct of Var	Cum Pct
		*				
Q2A	.26216	*	1	4.45100	19.4	19.4
Q2B	.44366	*	2	3.11254	13.5	32.9
Q2C	.18669	*	3	2.37128	10.3	43.2
Q2D	.40363	*	4	1.19819	5.2	48.4
Q2E	.34844	*				
Q2F	.25560	*				
Q2G	.57737	*				
Q6BA	.67233	*				
Q6BB	.76088	*				
Q6BC	.79764	*				
Q6BD	.61034	*				
Q6BE	.12656	*				
Q6BF	.36756	*				
Q7	.47639	*				
Q9BA	.20742	*				
Q9BB	.70483	*				
Q9BC	.74851	*				
Q9BD	.66396	*				
Q9BE	.59585	*				
Q9BF	.40284	*				
Q9BG	.54633	*				
Q15	.34353	*				
Q21	.63048	*				

Rotated Factor Matrix for Forced-Four Factor Analysis (where VARIMAX converged in 5 iterations):

	Factor 1	Factor 2	Factor 3	Factor 4
Q2A	.14520	-.14396	.46682	-.04933
Q2B	.00346	-.08968	.65906	.03532
Q2C	.11842	.12936	.38554	.08541
Q2D	-.09160	.10677	.61950	.00737
Q2E	-.09561	.04872	.50174	.29186
Q2F	-.10375	-.09511	.43858	-.20842
Q2G	.00781	-.19456	.73447	.00204
Q6BA	-.07005	.80034	.06106	-.15212
Q6BB	-.17599	.81619	.10498	-.22960
Q6BC	-.11227	.86219	-.18138	-.09365
Q6BD	-.03148	.76077	-.09779	-.14494
Q6BE	-.12047	.19232	.23828	-.13523
Q6BF	.11119	.59261	-.05151	-.03679
Q7	.12631	-.30821	-.13651	.58890
Q9BA	.42756	-.05365	-.14633	-.01794
Q9BB	.80066	.03152	.19332	.15942
Q9BC	.80970	-.02538	.06133	.29746
Q9BD	.80738	-.02885	.08719	.06053
Q9BE	.76423	-.07423	.07931	-.00236
Q9BF	.63302	-.01803	-.04143	-.00913
Q9BG	.71393	-.06481	-.16789	-.06521
Q15	.03006	-.23637	.11504	.52299
Q21	.04468	-.11155	.01056	.78481

Results from the the maximum likelihood logistic regression using factor scores from the forced four-factor model:

-2 Log Likelihood 68.919
Goodness of Fit 104.786

	Chi-Square	df	Significance
Model Chi-Square	61.000	4	.0000
Improvement	61.000	4	.0000

Table D.1 Observed & Predicted Values for Dependent Variable, "Forced, Four-Factor" Logit Model, SAPMA Internationalization Study & Mail Survey, Jan/Feb, 1996

Observed	Predicted		Percent Correct
	non-exporter	exporter	
non-exporter	54	7	88.52%
exporter	7	30	81.08%
Overall			85.71%

Table D.2 Summary of the parameters and test statistics for the "Forced Four-Factor" Model

----- Variables in the Equation -----							
Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
FAC1_2	.7771	.3389	5.2567	1	.0219	.1583	2.1751
FAC2_2	-.9735	.3782	6.6250	1	.0101	-.1887	.3778
FAC3_2	-1.0720	.3698	8.4045	1	.0037	-.2220	.3423
FAC4_2	2.5083	.5413	21.4709	1	.0000	.3871	12.2838
Constant	-1.0826	.3488	9.6308	1	.0019		

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