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FOREIGN DIRECT INVESTMENT AND PROCESSED FOOD TRADE

Edited By

Shida Rastegari Henneberry

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DIFFERENCES IN INTERNATIONALIZATION MODES: THE US VERSUS EUROPEAN UNION FOOD INDUSTRIES

Juan B. Solana Rosillo and Philip C. Abbott

Introduction

Food industries in the US and European Union (EU) have been undergoing substantial changes as globalization of these and other industries has occurred. The rapid internationalization of these industries, captured by both increasing trade and a shift in that trade toward high-value products and manufactured foods, is the first important trend describing this process. While global trade in agricultural commodities grew at 2.1% per year from 1961 to 1990, and overall merchandise trade increased at 5.0% per year, trade in manufactured foods increased at an annual rate of 9.4% per annum over this same period (Handy and Henderson 1991). Only 60% of US food exports are high value products, while 85 % of EU food exports are in that category. While developing countries were among the major markets for bulk commodities, trade in manufactured foods is concentrated, with 19 countries accounting for 89% of worldwide imports in 1990 (Handy and Henderson 1994). Thus, globalization of high-value agricultural products and manufactured foods is more closely following globalization trends than is bulk commodity trade, and trade between the US and the EU is an important component of that process.

A number of characteristics of this trade, and also of the way in which firms in the food industry are accomplishing internationalization, distinguish the manufactured food industry from bulk commodity trade, and suggest that our traditional trade models are inappropriate tools for explaining the pattern and evolution of this globalization process. Trade is increasingly intra-industry (like products are traded among similar countries), intra-firm (between subsidiaries or branches of a multinational firm), or in assets and skills rather than in products (foreign direct investment is replacing exports). According to Ethier (1994), our standard trade model, the Heckscher-Ohlin-Samuelson (H-

O-S) framework, would predict that trade should be greatest between dissimilar countries, and a country's exports should differ from its imports, with relative factor endowments serving as the key determinant explaining trade patterns. Intra-industry trade, intra-firm trade, and foreign direct investment each contradict the predictions of that model, and have driven a demand for new tools to explain observed trading behavior.

The nature and dominance of foreign direct investment (FDI) over exporting, especially for US food industry multinationals, is another key trend behind globalization of the food industries. According to Handy and Henderson (1994), overseas sales of foreign subsidiaries owned by US food multinationals were roughly four times exports of these firms in 1990. Furthermore, those sales, as well as exports, are "east-west" (between similar developed countries) rather than "north-south" (between dissimilar developed and developing countries). The EU, Canada and Japan accounted for 75% of total US affiliate sales abroad, while European firms accounted for 74% of sales by foreign owned firms in the US. European FDI also accounted for 80% of foreign investment in the US food industry in 1990 and 90% of that and other food industry FDI was for acquisition of existing firms rather than establishing new operations (Bolling 1992).

Handy and Henderson conclude that "Regardless of nationality, MNCs demonstrate a lower propensity to export than do other firms, implying that FDI and exports are substitute activities. However, the substitute nature of these activities appears to be substantially greater for US MNCs than for their non-US counterparts" (1994, 223). In addition, they point out that these differences in behavior of US and European multinational firms, in their choice of exporting versus foreign direct investment, and more specifically in how they choose to enter a foreign market (their internationalization "mode"), should help in understanding the forces determining the evolution of these markets.

Another force underlying this globalization process may be changing tastes and preferences of consumers in the US and EU. Connor argues that changes in EU food expenditure patterns parallel, with a lag, the recent trends in the US food sector. "[C]oncurrent changes (1985-90 in per capita food consumption are not correlated, but prior US changes (1970-80 and 1980-85) are positively associated with European changes during 1984-89." (Connor 1994a, 168) There

remain substantial differences in US versus European food consumption patterns, however, and these differences may account for differing ways in which US and European multinational firms now penetrate each others' markets. If Connor is right, however, this influence should diminish over time as Europeans adopt more convenience foods and eat more often at fast food restaurants.

Other factors in the economics of exporting and FDI may be the changing economic environment within which internationalization modes are chosen. For example, due to technological improvements in containerization, transportation charges for exports of processed foods is declining, and more importantly environmental control of containers permits higher quality products to reach overseas markets.

Trade liberalization under GATT will change the rules under which both exports and FDI are chosen, especially as the part of that agreement which deals with harmonization of product grades and standards is adopted. Regional integration initiatives may be even more important in determining rules of exporting, as are unilateral trade liberalization efforts. Economic reforms and trade liberalization often entail harmonization of standards, liberalization of domestic regulations, and changes in regulations on foreign investment, in addition to changes in pricing and protection of industries. The EU's 1992 Market Unification Initiative, for example, has been shown to have substantial impacts of the relative profitability of both trade options and foreign investment patterns (Cechini). These factors govern the transactions costs of exporting versus FDI, which are the consequences of both marketing and distribution costs, and regulations on those activities.

It is apparent from these trends that both EU and US firms are becoming more international by entering each other's markets, but the ways in which that is being accomplished differs, as does the relative importance of exporting versus FDI as the strategy choice of firms. One objective of this paper is to develop a framework within which this choice of "internationalization mode" (*i.e.*, the way in which a firm chooses to enter a foreign market) may be understood. Case studies will be utilized to examine how some US and European firms have made this mode choice.

A second objective is to develop an economic framework consistent with trade theory which can be used to understand how this

choice of internationalization mode is taken. Traditional trade theory now has relatively little to say about why these trends are occurring and why specific choices are made in a given subsector or industry, or even by a specific firm. Hence it has contributed relatively little to development of this framework. Elements of the New Trade Theory (Krugman 1989), which incorporate economies of scale, product differentiation and imperfect competition, may have more to say. Imperfect competition, and the industry structural characteristics leading to that outcome, have been recognized for some time as being important in domestic food manufacturing (Connor et al.; Marion), and increasingly this framework is being applied to international trade in processed foods (Sheldon and Abbott).

The business strategy literature (Porter 1986, 1990; Root) now appears to have more influence on firms and policymakers than does this trade literature. That approach tends to be ad hoc, and lacks theoretical or empirical rigor from the perspective of an economist, but offers policymakers and firms ideas they can use. However, economic models are beginning to incorporate lessons from the business strategy literature (see for example Ethier 1986; Markusen; Krugman 1979 and 1991; and Helpman). Therefore, we will look to both literatures in developing our framework to explain choice of internationalization mode, with the goal of formalizing the lessons in these literatures into a structure familiar to a trade economist's approach to analyzing a firm's choice of internationalization mode.

Internationalization Mode: Definition and Alternative Choices

Root defines entry modes as follows: "An international market entry mode is an institutional arrangement that makes possible the entry of a company's products, technology, human skills, management, or other resources into a foreign country" (Root 1987, 5). He refers in his discussion of this process not only to products, but also to other functions in a firm's value chain -- the process of transforming raw materials, labor, technology and management into consumer ready products, and servicing those products after the sale. Thus, a firm not only sells its products, but also the services provided by its other departments or divisions. These additional aspects introduced by Porter's value chain-- particularly the marketing dimension and input

supply -- are seldom accounted for in the trade literature, which focuses mainly on physical production.

Root also recognizes that firms' resources are limited, so entry mode should be the outcome of a process that compares the cost and benefits of a firm's options. In the international business literature, the firm is the unit of analysis and entry decisions are the result of a firm-specific process in which each company takes into account external as well as internal factors. Production costs, firm specific assets, and special firm competence are among the internal factors; whereas demand conditions, regulations, and the behaviors of competing firms are among the external factors influencing a firm's decision. Since the effects of external factors can be accommodated differently by each firm depending on its own structure, and since internal factors are generally firm specific, the international entry mode chosen may vary between firms in the same industry. Entry modes may vary within the same industry over time (due to learning economies), and by market (because of the size of the market), as shown by Patterson. External and internal factors determine at each moment the degree of a firm's commitment to international markets. The firm's resource base also increases with familiarity with international environments. Accordingly, firms may be asymmetric, aggregation problems may arise, so there may not be a "correct" entry mode by industry.

Three distinct entry modes are highlighted by Root: *export*, *contractual*, and *investment* entry modes. *Export* entry modes differ from the other two modes in that the physical product is the transfer that takes place between countries, while in the other modes services or technology are transferred. Products are exported either indirectly, through middlemen in the home country; directly, through target country middlemen; or by a subsidiary in the target country (intra-firm trade or IFT). This latter mode requires FDI in the host country even though it does not necessarily involve manufacturing overseas. Distinguishing features among these choices between alternative exporting modes involve who controls the marketing and distribution process. *Contractual* entry modes are "long-term nonequity associations between an international company and an entity in a foreign target country that involve transfer of technology or human skills from the former to the latter" (Root 1987, 7). Contractual modes include licensing, franchising, technical agreements, service contracts,

and co-production. Again, variations within this mode involve differing arrangements in the control over production, marketing, and distribution systems. *Investment* entry modes involve equity investment in the target country: new establishments, acquisitions, and joint ventures. They imply the greatest level of control over all aspects of production and marketing.

From the perspective of economic analysis of choices among internationalization mode options, two critical distinctions can be used to separate these mode choices. Those distinctions will also help identify the role of FDI, noting that with IFT, exporting and FDI can go together. These distinctions involve who retains control over the marketing and distribution of a product, and where that product is manufactured (at home or abroad). Table 1 places each entry mode choice identified by Root relative to these two managerial decisions. It identifies marketing and distribution control by independent middlemen, either in the home country or abroad, or by the manufacturing firm itself. The former involve exporting or contractual arrangements, while the latter involve some form of FDI.

Table 1. International Entry Modes

Marketing and Distribution Control	Manufacturing Location	
	Home	Abroad
Independent Middlemen		
Home	Indirect Export	
Abroad	Direct Export	Contractual
Manufacturer control/ownership	IFT	FDI

What Determines Internationalization Modes Choices

Three bodies of literature have dealt with international entry mode choice, examining this question from very different perspectives. The international trade literature takes a global, macroeconomic or aggregate industry level perspective. Firm level analysis and competitiveness are the domain of the business strategy perspective. A synthesis at the industry and firm level is beginning to appear in some economics and agricultural economics literature. In this section, we review the main theoretical foundations of each body of literature, as well as empirical studies in each related to international entry mode choice.

International Trade Literature

Trade theory studies internationalization from an aggregate perspective, generally based on general equilibrium analysis, and in the context of the H-O-S model. Concern with this approach arose when the received theory (neoclassical models) failed to explain observed behavior in international trade: resource endowments unrelated to trade patterns, intra-industry trade, IFT, and "east-west" trade and foreign direct investment flows (Ethier 1994).

A critical weakness of traditional trade theory is that the level of aggregation (national-general equilibrium) and the time framework (long run) are generally irrelevant for industry and firm decision makers. Some trade theory conclusions are also irrelevant for government officials, such as those from an economic system based on industry lobbying (as found in the "rent-seeking" literature).

There are three main assumptions in the trade models that limit the usefulness of trade theory to practitioners: equilibrium conditions, firm symmetry, and homothetic demand across countries. In many observable cases, short run action is essential for practical trade. That is, decisions take advantage of disequilibrium situations. Moreover, firms are differentiated from each other, not only in product, but also in the configuration of activities in order to find a sustainable competitive edge. Especially relevant for food trade is the assumption concerning demand homotheticity, since leads and lags in demand patterns across countries can explain part of observed trade and FDI flows. As pointed out by Abbott and Bredahl "...[T]rade theorists resisted, because homothetic preferences permit robust theorems to be derived, while differing trade pattern (and utility functions) can turn around otherwise useful conclusions" (Abbott and Bredahl 1994, 17).

One problem of trade theory is that what is assumed away to make general models manageable is also the interesting question which needs to be answered. Developments following the Leontief crisis and in New Trade Theory relax those assumptions, but have not led to a general model. For example, an early attempt to explain FDI among similarly endowed countries -- one attempt to reconcile Leontief's results with trade theory -- came from Vernon. His product cycle hypothesis suggests FDI flows arise as production moves from the US to overseas, since monopoly profits of an innovative product decline

over time. Many of Porter's factors determining international competitiveness can be found in such literature.

In another direction, Dunning (1981, 1988) explained a firm's decision to engage in foreign production rather than to license or export based on ownership, location, and internalization (OLI) advantages. While ownership and location advantages are necessary conditions to engage in foreign production, they can be substituted by exports or licensing. However, to obtain the full benefits from internalization advantages, the internationalization process has to be carried out via FDI or IFT. For instance, when the advantage is a firm-specific public good, and when the costs of transactions are prohibitive, using internal markets is the most efficient solution. That may be the case when there is a proprietary technology, firm-specific market know-how, or strategic multipoint competition. Neoclassical trade theory could not explain the dynamics of a product cycle nor the new sources of advantages based on Dunning's OLI paradigm.

Recent trade models have begun to introduce ideas from industrial organization related to explanations behind FDI. Product dynamics were incorporated in Krugman's (1979) north-south model. Ownership advantages arise in Markusen's model by integrating multi-plant economies of scale. Location advantages have also been studied by Krugman (1993). A difficult theoretical challenge is to incorporate internalization advantages in a general equilibrium framework. So far, the works by Helpman on MNEs' choice between horizontal and vertical integration, Ethier (1986) on the international economics of information, and Ethier and Horn on economies of scope and costs of managerial control of international operations have yielded mixed results.

Firm Level Analysis and Competitiveness: Business Strategy Literature

Firm level analysis studies the reasons for international entry based on firm level internal, external, and strategic characteristics. Competitive advantage addresses the entry mode in relation to a firm's competitiveness in both international and domestic markets. This line of research has been highly acclaimed due to its closeness to real problems and institutions, and because it addresses the questions that are asked

by decision makers (at the industry, firm, or government levels). However, economists feel adrift due to the lack of a rigorous framework which can explain, based on opportunity costs, the alternative options that firms face, and how to choose among them. This literature is divided here into two sections: industry globalization analysis and competitiveness in global industries.

Industry Globalization Analysis

Porter highlights two aspects of global industries: the increasing degree of economic integration of activities and the different types of globalization by industry. When the degree of interrelationship among competitive environments in different countries is high, we are in a global industry where competitive developments in one country affects competition in the same industry in another country (*i.e.*, for commercial aircraft). When competitive conditions in one country affect none of the competitive conditions in another country, we are in a multidomestic industry (*i.e.*, banking, accounting, or law firms).

Industries are further classified along two strategic dimensions: coordination of activities and configuration of activities along the firm's value chain. Accordingly, there are four types of industries:

- *Global industries* in which value chain activities are geographically concentrated and the degree of coordination among units is high (*i.e.*, commercial aircraft, semiconductors). Competition takes place on a worldwide basis (*i.e.*, Boeing versus Airbus, Intel versus Motorola). Exporting is the preferred internationalization mode and competitive advantage is based upon strong economies of scale through the value chain and with the firm's ability to coordinate a network of worldwide activities.

- *Country-centered industries* where domestic conditions determine competition in that industry. Competition takes place on a country-by-country basis between domestic firms and autonomous subsidiaries, where the degree of coordination with the parent company is low (*i.e.*, banking). Financial links among subsidiary and parent companies may exist, but domestic conditions determine success in that industry.

- *FDI-based industries* are those where there are high investment flows and extensive coordination among subsidiaries. Value

chain activities are located in different countries and competitive advantage is based upon coordination of activities, taking advantage of efficient production worldwide (*i.e.*, the computer industry).

- *Export-based industries* with decentralized marketing. These are industries where production activities are concentrated to take advantage of economies of scale, but marketing activities are dispersed to differentiate or adapt the product locally.

According to Porter, industry characteristics will determine the entry mode to compete on cost (same configuration and a cheaper product), via product differentiation (same configuration and different products), and by service differentiation (different configuration of value-added activities). Differentiation can take place either in the product or in the service that goes with the product.

Industry configuration worldwide determines a firm's strategic options, and thus affects the international entry mode, the fixed cost structure from international operations, and the revenue impact from international competition. For instance, in an industry where demand for products satisfying local tastes is strong, the entry mode may be investment in production facilities to adapt a global product to local tastes. For origin-specific products, the entry mode will be investment in distribution and marketing in the target country. The outcome is that international strategies are determined by the degree and type of industry's globalization, and thus will affect international entry mode. For example, when moving from bulk commodity trade to food trade, we move from production oriented competitive advantages linked with passive international entry modes (exporting) to consumer oriented competitive advantages associated with active modes of internationalization (IFT and FDI).

Other external factors that may affect entry mode choice are environmental factors in the target market: country risk, location unfamiliarity or cultural distance, demand uncertainty, or existence of supporting industries. High country risk, high perceived cultural distance, and demand uncertainty will favor entry modes with low resource commitments (lower investment and greater variable costs, Chan Kim and Hwang). FDI may still be attractive because of higher mark-ups in foreign markets, however. A typical mistake in this literature is to ignore these (residual) demand effects on revenue.

These frameworks offer a picture of how industries evolved through time, from being domestic to becoming global, which are the key determinant factors for firms' success in a given industry, and the diversity of firm strategies in international markets. However, this framework does not make explicit the economic trade-offs that firms face in an international environment, a fact that does not seem to be a handicap for management consultants to gain advantage against economists in advising policymakers and businessmen.

A conclusion from this literature is that "there is no one pattern of international competition nor one type of global strategy" (Porter 1986, 5). For those economists educated in a rational-deterministic tradition this outcome may be problematic.

Competitiveness Analysis in Global Industries

Entry mode in the competitiveness literature is taken as one more action in a firm's overall strategy towards its global market. As Porter pointed out: "A firm's choice of international strategy involves the search for competitive advantage from a global configuration/coordination throughout the value chain" (Porter 1986, 35). The value-chain integrates relationships among the different units in a firm.

According to Porter, firms possess two types of competitive advantage: low costs or differentiation. These reflect a firm's ability to perform the activities in the value chain "either more cheaply or in a unique way relative to its competitors" (Porter 1986, 20). The value chain involves *primary activities*, or physical functions (inbound logistics, operations, outbound logistics, marketing, and sales and service), and *support activities* (firm infrastructure, human resources management, technology development, and procurement) which provide inputs or infrastructure for primary activities. The value chain is a firm level framework in which we can study the effects that different international entry modes will have on total production cost. For instance, we can compare an international expansion's contribution to reduced average technology development cost versus the increase in infrastructure cost.

The value chain can also show a firm's potential profit from economies of scale in expanding its production, economies of scope

from increasing the number of segments or markets served, and economies of span by coordinating several functions. These options have an effect on revenues and costs, and are determined exogenously by the type of competition in that industry, and endogenously by the current configuration of firms' activities.

The trend from multidomestic to global industry is relevant to the food industry case if consumer preferences worldwide converge (Connor 1994a). Other studies in this field include Barlett on MNE organizational structure. In the food sector, the competitiveness framework has been applied by van Duren, Martin and Westgren and Reed.

Economic Synthesis: A Microeconomics Perspective and Empirical Application

Some of the elements of firm level analysis are found in economic studies, including studies at both the firm and industry level. These models are typically more microeconomic in perspective than is the case for the trade literature. These approaches have begun to influence agricultural economists examining the food sector.

Industry Studies

The Industrial Organization (IO) literature examines internationalization modes from the industry perspective, applying entry theory to international market entry. Its purpose is to find factors determining successful international entry across industries. This literature deals with domestic concentration ratios, firm size, R&D intensity, and firm specialization or diversification.

According to Connor (1983), FDI penetration is positively correlated with per capita home country advertising expenditures, firm's advertising intensity, firm size as measured by sales, and a firm-sale diversification index. The results from a recent study by Henderson, Vörös and Hirschberg on a sample of 628 firms with food and/or beverage manufacturing operations from 41 countries for the period 1987-1990 show that:

- There is an inverse relationship between export propensity and a firm's dominance in its home market.
- The extent to which firms specialize in food and/or beverage manufacturing is positively related to exports.
- Home market dominance leads a firm to invest in foreign affiliates.

- There is a significant positive effect of FDI on profits.
- Product diversity or differentiation discourages exports but encourages FDI.

Reed and Ning found for a sample of 34 US food processing firms that "advertising and marketing by American firms are important in FDI success and that FDI is a diversification strategy" (Reed and Ning 1995, 12).

The main concern with respect to studies in this area is that, as pointed out by Caves, Root, and Reed and Ning, entry in international market is a firm-level decision based on specific firm advantages. Moreover, industry structure through time may dictate different entry modes.

More study is needed at the firm level, as pointed out by Reed and Ning. In this line are the recent works by Patterson and Ravara. The latter validates an option model as representative of MNC market entry behavior and shows that increased host market size and real growth in the host market favor a wholly owned subsidiary mode, while increased host market uncertainty favors shared ventures as the preferred entry mode. Patterson found for broiler meat and wheat flour that a firm's expectations on sales growth and host market size favor a higher commitment entry mode (direct versus indirect exporting in his case) and that lagged export volume is correlated with the share of the market served by direct exporters, supporting the choice of a sequential entry mode as knowledge of foreign markets increases. The *contrasting empirical evidence* from these studies leads to a reasonable doubt on prospects for cross sectional studies which may not capture accurately industry dynamics. Unfortunately, required firm level data it is often not available nor observable. Researchers often must infer results from observable industry structure.

Transactions Cost Analysis

Another body of literature, at the microeconomics level, deals with the importance of transaction costs in international activities. Work in transaction costs started with Coase's classical article and with Williamson. Applying transaction cost theory to international entry mode are the conceptual frameworks developed by Casson, Hill, and Chan Kim and Alonso. An empirical application of transaction costs to internationalization mode, and specifically to the food industry, can be

found in Patterson. Transaction costs is one of the key pieces that we try to incorporate here in our economic analysis of international entry modes.

There are two main contractual theories of the firm: the Coasian and Knightian views. The Coasian view explains internalization based upon the cost of using the price mechanism. These costs include searching for prices, negotiation of transactions, and the costs of contract contingencies. Williamson (1975, 1985) expands this view by classifying costs into *ex-ante* and *ex-post* categories: *ex-ante* costs are those incurred when drafting a contract and *ex-post* costs are those that arrive from opportunistic behavior, after contracting, by the other side of the contract. The Knightian view explains internalization based on input, production, and final demand uncertainty. This literature leads to the study of vertical coordination of activities.

In reconciling these two contractual theories, according to Jones and Hill, the factors producing transaction difficulties are

- Bounded rationality: the limited ability to process information and foresee contingencies.
- Opportunism: the incentive to behave in self-interest due to cost of enforcing a contract.
- Uncertainty and complexity.
- Small numbers in trading relationships.
- Information imperfections.
- Asset specificity.

In international markets, transactions costs are especially high. For instance, the costs to find a buyer, communicating and negotiating, monitoring the transfer and payment of goods, and enforcing contractual agreements across nations are all likely to be higher than for a domestic transaction. All these costs lead to the critical relevance of transaction costs economics to explain observed behavior in international trade, market entry, or FDI.

Assume a given firm owns a proprietary technology or marketing know-how and it chooses between licensing the product abroad or creating a wholly owned subsidiary (WOS) abroad (*i.e.*, FDI). Licensing has *ex-ante* cost from drafting a contract plus the *ex-post* cost that the technology may be disseminated (opportunistic behavior by the licensee), in which case the firm's rents disappear. The option to own a subsidiary (WOS) brings the

costs of internalization but can avoid both types of transactions costs.

The probability of technology dissemination can be reduced by increasing ex-ante transaction costs. As the effort to draft a contract increases, the probability of ex-post opportunistic behavior decreases. Since a contingent free contract is impossible due to bounded rationality, for low levels of dissemination risk, ex-ante cost goes to infinity. Ex-post transaction costs increase as the probability of technology dissemination increases.

Internalization costs involve four main determinants:

- Capital costs of establishing a physical presence overseas.
- Cost of familiarizing the firm with the local market and culture.
- Cost of transferring know-how abroad using an internal market.
- Costs associated with controlling the expanded organization.

When there is a single project, technology obsolescence will make economic benefits of internalization decline over time. The expected revenue loss by technology diffusion will decrease while the transaction costs of finding a reliable licensee decline as knowledge of a given foreign market develops. A critical moment arrives when the firm should switch from WOS to licensing.

This argument may differ in the case of a firm with a continuum of innovations. In that case, economic benefits of internalization will not drop through time as fast as in a single project case, while the internalization cost will decline through time. Therefore, in the sequential project case, WOS may be the dominant internationalization mode.

This reasoning can be also applied to the case of different types of know-how (*i.e.*, marketing or technological know-how), and to different changes in environmental variables -- such as changes in uncertainty or changes in host market competitive conditions. Moreover, we need to made explicit the revenue impact from different internationalization modes.

Towards an Economic Framework for International Mode Choice

What should an internationalization framework explain? It should tell us why firms expand their international activities; how do they choose among alternative internationalization modes; and why do they choose a particular mode? To answer those questions, an internationalization

framework which is to be useful for economic analysis must specify the different trade-offs that firms face as a result of the options they must choose between. That is, an optimization problem (a profit function to be maximized) should be specified which incorporates all available options for a project, as well as opportunity costs associated with each option, and so the proposed project's effect on both costs and revenues. Moreover, an international entry mode has to be compared against alternative domestic projects. In this context, mode choice may be a set of discrete alternatives, and the optimal outcome requires that the addition to the firm's profit of the selected international entry mode is higher than any other alternative, taking into account the transactions costs and implications for residual demand faced as a consequence of the mode chosen.

While the business strategy literature offers firms a rich set of alternative options (what is available), that framework does not offer a consistent methodology to examine why and how firms should enter international markets, or which is the best option. Moreover, the business framework cannot offer any guidelines to public policymakers. This paper aims to frame in an economic context a firm's international entry decisions, to yield better qualitative and quantitative advice to managers and policymakers.

From the microeconomic perspective, firm behavior is represented by profit maximization, where a firm's outcomes are specified as a function of its actions and the actions of others. Table 2 outlines our framework, pointing out the objective, decision options, demand and revenue implications, cost implications, and constraints faced in choosing an international entry mode.

Decision Options

Firm entry decision's were categorized in table 1. Key distinctions among alternative ways to enter international markets were: what determines whether firms *produce* at home or abroad, and what determine the degree of control needed over *marketing, distribution, and other support activities* to go abroad. These decisions are in addition to the need to establish what to produce, how much, and whether to differentiate that product for a niche market, or target mass production of a commodity-like product. There may exist complementarities among multi-product decisions (shared infrastructure

or production facilities, for example). Sequential product innovations can also complicate the demand and cost projections.

Table 2. Economic Framework for International Mode Choice Evaluation

Objective: Profit maximization

$$\text{Profit} = \text{Revenue} - \text{Cost} = P(Q)q - C(q)$$

where

$P(Q)$ is inverse residual demand, and

$C(q)$ is cost, composed of production and support activity costs

Q is total market demand, and

q is residual demand faced by the firm

Decision Options:

Production (q)-Quantity & Product Characteristics (Differentiation)

Multi-product decisions and complementarities

Sequential product innovations

Internationalization Mode (table 1 categorizes options):

Location of production - Home or Abroad (Export or FDI)

Control over supporting activities - Contract or Invest

Marketing, distribution, service, R&D, etc.

Demand and Revenue Implications:

Residual Demand varies by internationalization mode choice

Economic conditions affect demand over time, opportunities

Revenue and mark-ups determined by residual demand

Cost Implications:

Transactions Cost Theory -

Fixed costs due to investment

production facilities and marketing infrastructure

Variable costs - physical production

Transactions costs

ex-ante for contracting and support activities

ex-post from opportunistic behavior due to partner self-interest

Dynamics due to learning and scale economies

Constraints:

Regulations -

domestic product standards, trade barriers, capital controls

Industry structure - initial conditions matter

Firm specific assets

Resources and prices by country

Demand and Revenue Implications

The revenue side should consider the residual demand facing the firm, the size of the market, and a strategic option depending on the timing of market entry. Conditions in the hostcountry economy can affect both the decision whether or not to go abroad and the timing of the decision. Entry actions are guided by the growth potential in the target market. Residual demand faced by a firm is determined by consumers preferences and by competition in that market. This residual demand determines how much a firm can mark-up its products in each market, yielding different revenues across entry options (*i.e.*,

residual demand at home is elastic because competition is strong while residual demand abroad can be inelastic due to lack of competition).

Revenue should also be considered from a dynamic perspective. Firms strategies should sustain a competitive advantage through time. Thus, firm actions will consider production at home or abroad, not only as a technical cost question, but also as a strategic option to deter entry in a market, especially where residual demand is steeper abroad than at home.

Cost Implications

Entry mode will differ by its contribution to three types of cost categories: fixed costs, variable costs, and transaction costs. Fixed costs are associated with a firm's configuration of activities (production facilities and supporting activities), while variable costs are associated with physical production, and transaction costs are associated with selling and servicing abroad. Transactions cost are divided in ex-ante (such as costs of drafting contracts) and ex-post (or costs arising from opportunistic behavior by partners) categories.

International entry mode affects these cost differently from domestic market entry, and each internationalization mode will have a different characteristic cost pattern. International expansion likely requires fixed costs to be divided among a greater number of units sold, potentially yielding economies of scale in production. On the other hand, we must account for higher cost to operate internationally (ex-ante transaction costs), the cost of opportunistic behavior by international partners under different jurisdictions, and the cost to coordinate operations abroad. Learning economies can also affect the timing of decisions, and the potential advantage of a sequence of product introductions. How each firm handles these options will yield different internationalization modes, as well as different degrees of competitive advantage, not only across industries but also between firms in the same industry.

Constraints: Institutional, External, and Internal

Entry mode decisions must be taken in the context of market conditions, industry structure, and the regulatory environment of the target country. In any profit maximization problem, resource scarcities and market prices are important, but institutional constraints can also

affect the transaction costs of an international entry. The prior actions of other firms -- that is initial conditions in a dynamic optimization problem -- can be important in determining a new firm's optimal strategy. Firm specific assets also condition the outcome of a particular choice. Trade barriers and product regulation can either make transaction costs increase, or even make certain options prohibitive. For example, quotas or health and safety regulations may preclude the exporting option, or simply make it too costly, encouraging FDI as the preferred alternative.

Profit Maximization and Entry Choice

Profit maximization will be the result from considering the effects of each entry mode on revenues and costs, but from the point of view of a firm-specific advantages and the strategies to maintain those advantages (thus incorporating the competitiveness literature in an economic decision framework). This framework is much like a cost-benefit analysis. Each entry option (set of firm actions) will affect a firm's costs and revenues, and in the context of an optimization problem, may be expressed in terms of opportunity costs among a firm's available actions. For an international entry mode to be the selected option, the addition to profit from internationalization has to be higher than any other domestic or international option. Therefore, this methodology will also detect why firms do or do not internationalize.

Case Studies

Based on this economic framework, we consider here the internationalization process of a successful US firm (Kellogg) and compare international entry modes of the European food sector to its counterpart in the US. In the following case studies we will examine the application of our economic framework to firm level analysis: that is, on the effects of strategic options to enter international markets.

Kellogg Company

In 1993 worldwide sales of the Kellogg Company reached \$6.3 billions, with 40% of those sales coming from outside the US. Kellogg distributes its products in 150 countries and has manufacturing facilities in 18 countries. Kellogg is present in North and South America, Europe, and the Asia-Pacific region. Kellogg is facing strong

competition in the domestic US market. New product promotions and marketing strategies by competitors have forced Kellogg to increase its advertising bill substantially. However, in international markets, Kellogg is a clear leader. Its market shares in ready-to-eat cereals markets are 38% in North America, 47% in Asia-Pacific, 50% in Europe and 78% in Latin America.

One strategy of Kellogg is to establish production facilities overseas. Hence, it has shown a preference for FDI over exporting or contracting. Kellogg opened new production plants in Latvia during 1993, India in 1994, and China in 1995.

The cereals market is growing rapidly in Europe. Increases in cereals sales between 1992 and 1993 (over one year) have been 21% for France, 26% in Spain, and 29% in Italy. Production facilities have expanded to accommodate this growth in demand.

Kellogg's main products remain ready-to-eat cereals, but it has started to diversify to the convenience food segment.

The main factors behind Kellogg's success in international markets are:

- Advantages of being the first-mover over a long period of time. For example, Kellogg opened facilities in Europe 50 years ago. That has allowed Kellogg to profit from the growing demand, especially since no strong European competitors have arisen. Similar examples apply for other continents.
- Worldwide infrastructure and financial resources.
- Demand side: health advantages and the nutritional value of cereals. Grain based products fit into the low-fat, high fiber diet recommended by the USDA.
- Cost side: Kellogg takes advantage of economies of scale in supporting activities (*i.e.*, firm infrastructure, technology development, and procurement) while they transfer marketing and production know-how to the host country.
- Informational advantage: Worldwide leader in trends that have previously developed in the US, not only in the cereals market, but also in the convenience food segment.
- Residual demand differences: Kellogg faces a steeper (less elastic) residual demand in foreign markets than in the US, allowing it greater mark-ups on its products.

Three main features of international entry strategy in the Kellogg's case are explained by the economic framework developed in this paper: residual demand, sequential projects (new product introduction), and difficulties in externalizing Kellogg's firm specific

advantages (demand knowledge, strategic entry deterrence, and technical know-how).

Kellogg faces three alternative strategies to increase its profits: reduce average cost, increase average revenue, and/or increase the number of units sold. The first strategy will exploit economies of scale in supporting activities, making average costs decline. In order to increase average revenue via expansion, the slope of the residual demand facing the firm has to be inelastic.

Two general investment options are possible: to increase marketing effort in the domestic market or to expand to foreign markets. The domestic market exhibits low growth potential and competition is increasing (Kellogg is losing market share in the US). Therefore, the prospects for increased average revenue in the US market are weak. On the other hand, the international market is growing fast, and Kellogg's dominant position is evident. Thus, growth in quantities sold and mark-ups are higher abroad than at home. That leaves open all international entry mode options. However, the presence of indivisibilities (fixed cost from supporting activities), the bulkiness of the product, and strategic entry deterrence encourage an entry mode that internalize those advantages, which otherwise could not be captured by contractual arrangements or exports. Under licensing there is a risk that Kellogg would not fully capture all the rents in overseas markets, plus there could be losses due to foregoing potential average cost reductions. As a result, Kellogg has continued foreign investment expansion building.

An FDI entry mode is reinforced in Kellogg's case by the dynamics of new product introductions. In 1993 the company launched 5 new products in Europe, 3 in Asia-Pacific, 4 in Latin America, and 4 in North America. In this sequential project case, this feature will favor the FDI option over licensing.

The strategy used by Kellogg – entry via new plants – and the dominant market position has encouraged a different entry mode in subsequent entries by competitors. General Mills' entry strategy in the international ready-to-eat cereals market has been through a strategic joint venture with Nestle. (General Mills has the know-how while Nestle has production and marketing facilities worldwide). Hence, in this case the logical entry modes for two large multinationals in a narrow market differ due to strategic advantages of early entry by one firm.

European FDI in the US Food Industry

The European food industry can be characterized by its diversity of cuisine and products. The three main cuisines – Mediterranean, Nordic and Central European – are based on different consumption habits throughout Europe. Thus, a European firm must adapt food products to local tastes.

Another key characteristic is the importance of geographic-specific production (*appellation d'origine*). Products tend to be differentiated by where they are produced (*i.e.*, Roquefort cheeses, Rioja wines, Spanish ham) rather than by a brand name. This is a product differentiation strategy focusing on niche markets and high quality products.

These characteristics are key to the success of EU firm entry into the US food sector, and have defined industry characteristics at home and abroad. European firms have a low geographic scope, a smaller size compared to US firms, and European multinationals are more flexible, adapting products move readily to local tastes (Rastoin and Perez; Handy and Henderson 1991).

This disperse and diverse industry structure translates to lower productivity levels in European firms compared to US firms. According to Handy and Henderson (1991), sales per employee in US food industries average \$218,000, while in the EU this average is \$136,000. Value added per employee in the US food industry is \$84,000 compared with \$35,000 in the EU. The top 50 US firms represent 52 percent of total sales, while the top 50 EU firms represent 38 percent.

Differences in industry characteristics also determine a different internationalization pattern between EU and US food industries. Due to the smaller size of EU firms and the constraint of location specific production, exports tend to be the preferred entry mode for EU firms. They target a specialty market rather than a mass market. EU MNEs have developed an ability to customize products to different markets. Their strategy is a collection of country-centered strategies rather than a strategy based on coordination among subsidiaries, as in the US MNE case.

The advantages from internalization present in the US case are not present in EU specialty products. The EU firm-specific advantage is embedded in the product, not in the process of production nor in coordination of activities. Given different EU versus US industry structures, and differences in firm abilities (*i.e.*, EU firms' flexibility to adapt

to local tastes and US firms' coordination of subsidiary activities), and differences in local investment options, internationalization modes differ between US and European MNEs.

A growth strategy based on increasing the slope of the residual demand function (product differentiation) is implemented via FDI by US firms and via exports by European firms as a result of external factors (product characteristics and dispersed distribution of demand) and internal factors (investment, infrastructure, and transaction costs). However, this characteristic constrains the expansion of EU products due to increasing long run average costs. Investment costs are both high and necessary for their strategy.

Future evolution of European firm strategies should be seen in the context of investment options arising from the Single European Market project (1992 Market Unification). However, the movement from a divided to an integrated market generated the following dynamics: less need for physical presence in all the countries and advantages from centralizing some value chain activities. Thus, a process of concentration in activities as well as in ownership is now a priority among many EU firms in their European-wide strategy. This strategy will increase firms' profits through cost reductions and increases in the volume of sales.

Moreover, a recent expansion strategy followed by EU MNEs is FDI in US production facilities to replicate the specialty products, but now without the *appellation d'origine*. For instance, foreign owned cheese production facilities in the US increased from 3 percent in 1987 to 14 percent in 1990 (Connor 1994). In that period, Bongrain, Sodiaal, and Source Perrier (leading French firms in the dairy sector) acquired several production and distribution facilities in the US (Bolling). This is likely due to high transaction costs of exporting (shipping cheese overseas), and non-tariff barriers (health and safety regulations for cheese which differ across continents).

Conclusions

This paper developed a framework to understand a firm's choice of international entry mode. The framework casts this firm decision in the context of a profit maximization problem, and considers evaluation of discrete alternatives as is done for a cost-benefit analysis of alternative projects. In this case, alternative options come from the ways in which firms may choose to enter international markets. Two key decisions

are: where is production located? (at home for exports and abroad for FDI) and how much control is exercised over marketing and support activities? (contracting versus investment). Elements of the framework are residual demand impacts on revenue, costs associated with specific choices (including transaction costs), and constraints on choices, including trade barriers, regulations, and firm specific advantages. The outcome of this framework is specific trade-offs between discrete entry modes, which firms choose in order to maintain their competitive advantage.

The objective of economic analysis is to find the best among available options, accounting for a set of constraints. What we have found in the business strategy literature is a rich set of good options that can be used, but without any constraints on choices and without explicit trade-offs among alternative actions. However, that literature yielded excellent tools to analyze international entry modes. We utilized Root's entry mode work and Porter's value-chain and global industries analyses in identifying components of our framework. While traditional trade literature is less useful in addressing this question, the issues raised in the business strategy literature have begun to appear in some trade literature.

We also incorporated work on transactions costs by Hill and Chan Kim, that has gone beyond the treatment of this concern in the trade literature. They introduced a firm's residual demand across markets and the strategic value of investments to maintain an internationalization option advantage. Differences in demand preferences across countries can also change the attributes of a given product. This fact, together with potentially lower competition abroad, may explain why firms choose a particular international entry mode over domestic expansion.

What we have as a result is a consistent economic framework where all options are explicit and examined in relation to the firm's other available options. This framework can be used either for qualified economic advice to firms (which is the best among good options?) and for policy design, since competitiveness constraints are now explicit. This framework can also shed light on whether FDI and exporting are complements or substitutes, noting that these can go together in the case of IFT.

Application of this framework was useful in explaining differences in internationalization mode choice between US and EU food industries. The US food industry tends to use FDI rather than exports due to product-specific factors (bulkiness) and firms-specific advantages (ability to

coordinate activities worldwide, transactions costs, and knowledge of future residual demand). European firms' greater tendency to export was explained in part by the low transaction costs associated with intra-EU shipments, and due to the nature of food consumption in the EU, which has driven a tendency to develop high quality, region specific products destined for niche markets. Also shown by the case studies is that entry mode will differ not only across industries, but also across firms in the same industry. International entry mode is a firm-specific action based on firm-specific advantages.

This framework yields a broader set of policy recommendations than are found in the trade literature. While the latter are generally price oriented (subsidies), now we can assess the effects of policies directed toward transaction cost reduction on a firm's choice to license, produce abroad, or export directly, indirectly or via IFT. An institutional policy aimed at reducing transaction costs (or reducing constraints making an option prohibitive) may yield significant changes in those internationalization modes where high transaction costs now drive the entry mode choice.

Much work remains to be done in further development of the framework following application to specific US and EU food processing sectors.

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