TEIT LÜHJE and PER SERVAIS

Firms’ International Sourcing and Intra-Industry Trade

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1. Introduction

Over the last couple of decades there has been a growing interest in what should be the conceptual domain of international business. Toyne (1989) argues that the core should be international exchange as it constitutes the product of joint decisions made by two or more actors based in different countries (Lye and Hamilton, 2000). In a review of the academic literature (Liang and Parkhe, 1997) a striking imbalance is revealed since one side of the coin - the exporter side - has been extensively studied, while the other side - the importer side and the associated motives - has largely been neglected.

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Throughout the 1980s and 1990s the growing interest in international business has been reflected in leading journals, the paramount importance of the articles has, however, been oriented towards firms’ sales and export activities. Since the late 1980s a growing interest in manufacturing firms’ international sourcing activities have occurred, stressing the importance of this phenomenon to firms’ success (Min and Galle, 1991). In a chronological analysis of 126 empirical studies of international exchange published in the period until 1995, Lye and Hamilton (2000) divide the studies into groups according to their main focus being exporters only, importers only, dyads and unmatched groups. They found that 106 of the studies have been confined to exporters only, 14 to the study of balanced or unbalanced dyads, and only 6 studies dealt with importers only.

This is somewhat surprising since the understanding of industrial firms’ ability to purchase internationally and their motivation for doing so are crucial to the local suppliers. If firms do not comply with this knowledge about their customers’ behavior, they might adapt themselves to a less effective marketing strategy (Arnold, 1989). Both domestic
and foreign suppliers as such have a natural interest in obtaining a more profound insight into the more fundamental motives for an industrial firm to search for foreign supply alternatives in order to strengthen its marketing activities. As to domestic suppliers, the mapping of customers’ motives for searching internationally for potential suppliers might improve their ability to meet international competition. Foreign suppliers, on the other hand, would have an interest in learning about customers’ experienced problems, perceived barriers and anticipation of international purchasing in order to improve their export activities. As to the procuring firm, the lack of knowledge about international purchasing is often a factor of uncertainty, which leads to a narrow focus on the domestic market leaving the firm with a potential lower competitiveness compared to competitors who source, or consider to do so, internationally, and also the lack of knowledge of fitting into the international supply chain or production networks might hinder the firms’ strategic development. Overall knowledge about other firms’ experience with international sources might lead to keener attention on the possibilities in respect of the performance of
one’s own purchasing function and hence contribute to a possible overall improvement of firms’ competitiveness.

2. Defining International Sourcing

Reviewing the literature on international purchasing reveals the fact that most empirical research has been concentrated largely on North American firms or multinational corporations from the United States. The review also discovers that the research areas covered are somewhat scattered. Some researchers focus upon international purchases of different types of firms e.g. retailing companies (Liu and McGoldrick, 1996; Reichel, 1989) and service companies (Murray and Kotabe, 1999; Kotabe and Murray, 1998). In the area of sourcing strategies of multinational cooperation’s a research tradition seems to have been established (Kotabe, 1989; Kotabe, 1992; Murray and Kotabe, 1995).

Other researchers have been dealing with different aspects of international purchasing like the country-of-origin effect (Cavusgil and Yavas, 1985; Güdüm and Kavas, 1996, Thorelli and Glowacka, 1995, Zhan Li and Murray, 2000) or
the perceived risk in foreign purchases (Håkansson and Wootz, 1975) and the firm’s ability to conduct international purchases (Hallén, 1982). Others again have focused more upon the outcome of the purchasing process (Arnold, 1989; Murray, Kotabe, and Wildt, 1995; Petersen, Frayer and Scannell, 2000).

The growing interest in the purchasing and supply chain management has generated a variety of organizational concepts describing firms’ acquisition of materials. The terms buying, purchasing, procurement and sourcing are usually used interchangeably but in the academic literature these terms are often used in number different contexts (Leenders and Fearon, 1993). Buying refers generally to the actual buying of materials and the associated decision process within a firm. Purchasing is a broader definition in terms that it also covers some activities related to the buying process and procurement is normally used to describe the purchasing process in public organizations e.g. hospitals, universities, etc. Sourcing is broadest in definition in the sense that it includes all meant by purchasing and in addition embraces certain strategic issues like the relationship to different suppliers (Hill
Sourcing also includes the purchasing of materials within the organization, whereas the term outsourcing emphasises that the materials are bought from independent suppliers (Sharland, 1993).

When a firm makes a sourcing decision it can choose to use internal or external supply sources (make/buy decision) and domestic or foreign suppliers. Domestic sourcing is when the firm and the suppliers are located in the same country, whereas international sourcing involves the acquisition of material from foreign sources i.e. the suppliers is located in other countries than the acquiring firm itself. In the following we shall focus on the international sourcing dimension with special focus on the driving forces for firms to engage into choosing and using foreign sources.

International purchasing emerged initially as a reactive strategy designed to secure the availability of materials and to reduce production costs (Birou and Fawcett, 1993). Today international sourcing strategies are increasingly targeted at gaining and maintaining competitive advantage (Monczka and Trent, 1991). In order to manufacture and deliver globally world-class products at low price and high quality firms must,
regardless of their size, have access to world-class technological expertise and an ability for scanning the best suppliers throughout the world (Monczka and Trent, 1992). Therefore, a firm must be willing to source materials from foreign sources if they are superior and at the same time it works with upgrading local suppliers. For many firms the main question is not whether to use or not use global sourcing, but how to use it optimally in order to achieve competitive advantage (Murray et al., 1995).

3. Forms of International Sourcing

The term international purchasing has been used in a number of different contexts. According to Kotabe (1992) in the broadest sense it refers to the process of determining which production units will serve particular markets best and how materials will be supplied for production. In this vein Moxon (1982) has identified four more specific forms of international sourcing:

- International purchasing
- International subcontracting
- Foreign joint-venture manufacturing
- Controlled foreign manufacturing

  International purchasing denotes the relationship between independent buyers and suppliers in which materials are exchanged for money. This arrangement may vary in many ways including whether the transaction is directly between the buyer and the producer or through intermediaries and whether the buyer and supplier deals on ad hoc basis or they have a long-term agreement.

  International subcontracting covers many different types of relationships between the independent firms in which the buyer is more involved with the foreign supplier than in the simple sourcing situation and typically they do have direct relationships. The buyer may provide detailed product specifications, technical assistance, physical equipment, materials and even some financing for the foreign supplier. Foreign joint-venture manufacturing involves the joint ownership of a foreign manufacturing company by a firm and a foreign partner. Controlled foreign manufacturing is a sourcing relationship between parent firm and its subsidiary or a sourcing relationship between parent’s subsidiaries.
The sourcing forms differ from each other in respect to the degree of involvement in international sourcing and the degree of control exercised by the buyer over the foreign supplier. As foreign joint-venture manufacturing and controlled foreign manufacturing involves direct foreign investments in overseas production facilities they constitute the basic forms of international intra-firm sourcing. International sourcing and international subcontracting do not involve any equity participation in foreign supplier; hence they are the basic forms of international inter-firm sourcing.

Hallén (1982) establish a distinction between the terms imports and international purchasing. The former is a term of economy and refers to flows of goods across the border into the buying country. The latter refers to the cases of imports where the negotiations are carried out directly (i.e. no use of intermediaries) with the independent foreign supplier or indirectly with its local representative if there are also some direct contacts with foreign suppliers. Furthermore research has also established a distinction between the concepts of international purchasing and global purchasing. Monczka and Trent (1991) suggest that the term global refers to the
integration and coordination of purchasing activities across worldwide business units.

In the following we shall furthermore adapt the distinction by Liang and Parkhe (1997) that importers can be divided into two groups; a) pure importers who import for their own operational needs and b) trade importers who resell the goods imported. We limit our research to international sourcing of intermediate goods by manufacturing firms for their own operational needs. Intermediate goods (e.g. components, parts) are defined as produced goods which through the production process are transformed into goods of a greater value, whether another intermediate good or a final good.

4. Motives for International Sourcing

The driving forces for a firm to engage into international purchasing are of course of pivotal interest when studying the field of international sourcing. Traditionally, lower prices or cost advantage has been the main motive for international purchasing (Birou and Fawcett, 1994) Cost advantage can arise, for example, from lower labor and material cost, scale
economics, better productivity and local government subsidies. Lower prices can also be due to favorable exchange rates. Purchasing from foreign markets usually rise as the home market’s currency becomes stronger, and vice versa.

Several studies indicates (Monczka and Trent, 1991) that importing firms expect an improvement in four critical areas by foreign purchases: Cost reduction, Quality improvement, Increased exposure to worldwide technology and Delivery and reliability improvements. Others important reasons for international sourcing include: Increasing the number of available sources, reacting to foreign sourcing practices of competitors, introductions of competition to the domestic supply base and establishing a presence in a foreign market. These motives laid down a base for several empirical studies of manufacturing firms international purchases in both Europe and the US, for a comprehensive review please refer to Scully and Fawcett (1994), Petersen, Frayer and Scannell (2000) and Servais and Jensen (2001), however the studies overall support that the above mentioned motives are vital motives for the importing firms.
Along with cost, quality and availability there are many other motives for international purchasing. Some firms pursue international purchasing as a supply chain management strategy. They may try to find additional supply sources or increase competition among domestic suppliers and thereby leverage their own competitiveness. In some cases international purchasing operations are conducted to prepare for an entry into new sales market or support currents marketing and production operations in foreign markets (Arnold, 1989, Monczka and Trent, 1992). Establishing a presence in foreign supply markets may also be due to counter trade and local content requirements. However, while it seems that international purchasing was initially used as a reactive response to global competitive pressures, that is, for the cost reasons or as means to gain access to materials and components, international sourcing is now increasingly used as a proactive strategy to gain competitive advantage (Monczka and Giunipero, 1984).

Kaufmann and Carter (2000) compared in a large comparative survey the international purchasing patterns by German firms and U.S firms. In German firms a significantly
greater percentage of bids came from international suppliers, while there was no significant differences between the German and U.S. participants in terms of the number of geographic regions in which foreign suppliers was located. These findings suggest that there are natural and perhaps logistical constraints for the geographic spread of supply bases. Furthermore, German firms seem to generate relatively more bids from foreign suppliers, perhaps to allow international market forces to increase competition among their domestic suppliers. Hence Kaufmann and Carter (2000) points out that German international sourcing is under influence of two factors; One being the mergers between German suppliers leading to a sort of monopolistic competition situation among local manufactures. The other factor is the outsourcing strategies by German firms leading to the search for highly skilled suppliers. In other words German industrial customers are searching for European suppliers that are able to deliver low-costs products and/or knowledge intensive products of high quality. This finding support the research by Monczka and Trent (1991) where they found that during the 1980’s foreign producers captured increased world
market shares across many industries and this transition was so rapid that many domestic suppliers were unable to respond to the changing needs of domestic purchasers, so buyers was more or less forced to source from world markets in order to prevent further erosion of market shares. Once firms gained international purchasing experience, Monczka and Trent (1991) continues, the motivation was not longer survival but rather to secure cost, quality, technological, and other advantages: “International sourcing had become a strategy to be actively pursued in a globally competitive environment” (p.3). Research has even shown that international exchange is often importer initiated and not always exporter driven (Welch and Luostarinen, 1993; Korhonen and Welch, 1996; Liang and Parke, 1997) and that international sourcing is not only confined to large firms (Servais and Jensen, 2001).

Behind the above mentioned motives there are two rationales 1) that the product/service is not available on the domestic market and 2) that the foreign suppliers has competitive advantages derived from the production conditions of these firms’ (Dunning, 1988). The missing availability on the domestic market could lead to that the
buyer redefines the need in order to suite the offers by domestic suppliers. But this seems not to be case; research shows that industrial buyers in general are well informed of offerings by foreign suppliers (Birou and Fawcet, 1993; Scully and Fawsett, 1994). The different production conditions by foreign suppliers is one explanation as to some of international purchasing, but research has shown (Servais and Jensen, 2001), that not all international exchange takes place between countries with very different production factors. Hence the aim of this paper is to elaborate further on these findings and to establish some insights and explanation to the fact that firms’ do source from suppliers in very similarly countries as to their home country.

5. Vertical Specialization in International Trade

As mentioned previously the prime reasons for firms’ to search for foreign suppliers who produce intermediate goods is the lower costs and/or higher quality, hence the firms seeks higher efficiency in the final good production. The picture is, however more complicated, since the suppliers do not only produce standardized intermediate goods but seeks to give
value adding in their products like adapting towards the customers needs through e.g. market orientation. This phenomenon is referred to as vertical specialization in the final good production.

Over the last decade vertical specialization has played an increasingly important role in international trade e.g. by Hummels et al. (1998) whose evidence from case studies and input-output tables points to large and increasing shares of trade that can be attributed to vertical-specialization-based trade. Furthermore, Yeats (1998) shows that over the past decade trade in machinery and transport equipment components has grown considerably faster than end products in this group.

The traditional idea behind vertical specialization across countries is the exploitation of factor price differences in the world economy, locating skilled-labor-intensive phases of operation in a skilled-labor-abundant country and unskilled-labor-intensive phases in suitable locations - see e.g. Dunning (1993), Helpman (1984), Helpman and Krugman (1985), Krugman and Venables (1990, 1995, 1996) and Lüthje (2001a). Doing so, the production process is split vertically
between the home country and the host country, and the split productions are therefore located in accordance with the countries’ factor endowment. A good example of this is a production of knowledge-intensive inputs on the home market and the supply of these goods to a subcontractor or subsidiaries in a low-wage country for assembly. By that the vertical integration in the production is grounded on the benefits of division of labor and can accordingly be seen as a refinement of the conventional framework of comparative advantages, according to which the vertical integration is a consequence of the across-country differences of factor endowments.

Seen in the light of these facts, it was to be expected that large direct investments would flow into countries with relatively larger labor abundance. However, the most labor-abundant countries have actually been receiving very few investments. Zhang and Markusen (1999) show that during the period 1983 to 1994 the least-developed countries’ share of foreign direct investment in all developed countries averaged less than 2%, and that the share even declined to 1% in 1994, this in spite of the fact that the least-developed
countries’ shares of domestic production and population in all developed countries were above 4% and 11%, respectively. Accordingly, the world’s most capital-scarce economies do not attract much foreign direct investment. One among several reasons why the least-developed countries might attract so little foreign direct investment is the need for skilled labor in the production process. Furthermore, the developed countries are not only the major source of outward investment, but they are the major recipients of inward investment as well (Markusen, 2002: 8-15).

It appears that a large part of vertical specialization in the production takes place across developed countries and hence identical countries. An additional indication of this is seen in Lüthje (2000), which through an extensive empirical analysis shows that a considerable part of foreign trade between the industrialized countries takes place as intermediate goods, i.e. as goods that are produced in one country and used as input in other industries in both the home country and the trading partners’ countries. Thereby, the trade in intermediate goods between these countries is characterized by intra-industry trade, i.e. two-way trade with both export
and import of different varieties within a differentiated product category. In the following section we will further elaborate the argument for vertical specialization across identical countries.

6. An Argument for Vertical Specialization Across Identical Countries

To set out an argument for vertical specialization across identical countries we accordingly have to look at the advantages in final good production by intra-industry trade in intermediate goods. Both intermediate goods and the final good are horizontally differentiated. As mentioned above intermediate goods are produced goods which through the production process are transformed into goods of a greater value. The value added from the production of intermediate goods to the final good is defined as the net production of the final good. This implies that intermediate goods and other production factors in the net production are further worked up to the final product. Therefore, the net production must be regarded as an independent productive split process involving
labor, capital and intermediate goods, which, as far as the latter is concerned, enter into a sequential production process.

Every single consumer’s preferences regarding the alternative final good varieties may be caused by the wish for partly to obtain variation in the consumption, the so-called “Love of Variety Approach” (Dixit and Stiglitz, 1977), and partly to get the product which best fulfills the characteristics demanded, the so-called “Ideal Variety Approach” (Lancaster, 1979). In the following we apply the Lancaster ideal variety approach to the use of intermediate goods in the final production, because the highly specialized production processes demand that the intermediate goods fulfill the connected specific needs for factors to the greatest extent. Hence, in every link of the production process there is an exactly defined need for an intermediate good according to a certain kind of specification. Such a variety constitutes an ideal intermediate good (for further details see Lüthje (2001a, 01b and 03)). As an example of this we take steel. Steel has to meet a certain kind of specification depending on its end use. This may be steel products such as e.g. wire, steel tubes and steel plates, where the intermediate goods must be of a certain
scantling, weight etc. in order to fit into the continued production. These steel products are used in the production of more specified intermediate goods, e.g. components, and thereby finally in the production of final goods for production, e.g. machines and buildings, or consumption, e.g. house building and means of transportation. Another example is paper. Paper also has to meet a certain kind of specification depending on its end use, e.g. for printing works, writing paper or newspapers. Hence in every part of the production there are specific demands for the intermediate goods, and accordingly the intermediate goods have to meet exact specifications.

The production technology of the group of intermediate goods being considered is taken to be non-combinable. This means that the individual producer of a final good cannot obtain characteristics in proportions not represented among available intermediate goods by buying more of such goods and using them in combination. Wire has to have a certain length, or a component has to fulfill a certain scantling to fit into a personal computer, a TV or a car. Similarly, paper has to be of a certain quality and size to fit into the production of
newspapers or books. This is also the reason why the Dixit and Stiglitz “Love of Variety” approach cannot be applied. It makes no sense to obtain variation in the use of intermediate goods’ varieties to a specific productive activity. If there are many varieties of intermediate goods to choose between, the final good producer chooses the variety, which in the best way can fulfill the demanded characteristics, and *not* more varieties within the category in question.

Thus, the production of one specific variety of the final good requires a specific variety of the intermediate good. Thereby, the number of varieties of final good varieties determines the number of ideal varieties of intermediate goods. However, because of increasing returns to scale in the production of intermediate goods it is uneconomic to produce all the ideal intermediate goods. Hence, the producer of the final good has to use the variety of the intermediate goods, the specification of which is closest to the ideal variety. This intermediate good has to be adapted for the production process by the use of labor and capital, and the greater the “distance” to the ideal intermediate good is, the more performance of labor and capital is required. Because of this,
there is less labor and capital available in the net production of the final good, and consequently, the productivity in the production of the end product is reduced.

Thereby, we have an incentive for vertical collaboration between a final good producer and the producer of intermediate goods, the specification of which is either closest or identical to the ideal intermediate goods. If the intermediate goods are not produced in the country where further transformation into the final good takes place, the vertical specialization in the production will take place across identical countries. When we apply the vertical and independent relation between a producer of intermediate goods and a producer of final good producer, we have a pure, decentralized market solution with informal relations between the producer of an intermediate good and one or more final good producers. Provided that more than one variety of intermediate goods enters into the final good production, it is possible that many sub-contractors will supply one producer of end products. On the extreme edge the final good producer only handles the final assembly of sub-deliveries forming the final good. Thereby, the flexibility in the total production of a
final good is pushed on to the sub-contractors. A good illustrative example of this is Nike, where sub-contractors primarily in Asia produce the entire firm’s shoes, and where more than half of the sub-contractors produce Nike-products only.

The number of producers of intermediate goods and hence the number of varieties of intermediate goods in a monopolistically competitive industry are affected by the size of the market. In the larger market final good producers have a wider range of choice, whereby the single final good producer comes closer to the ideal intermediate good, and accordingly the productivity in the final good production increases. The increased market access is for instance obtained when identical countries engage in international trade. As mentioned in the introduction this increased productivity leads to higher competitiveness of the firm and thereby also increased exports.

In the following we assume that two economies are identical with respect to production technologies, resources and distribution of consumer preferences. If the countries trade freely without barriers or transport costs, they constitute
a single market for, partly, horizontally differentiated intermediate goods and, partly, horizontally differentiated final goods. These markets have the same properties as each economy in autarky, while the number of varieties in final good and intermediate goods will increase. Under conditions of free entry and perfect information the structure of trade between identical countries will be that of perfect monopolistic competition, in which no two producers will produce the same variety of one good. This means that each variety of the intermediate goods will be produced in only one of the countries, but it will be used in the final good production in both countries. The total amount of varieties of intermediate goods in the two countries will be the same, which means that each country’s exports of varieties of intermediate goods match the imports of other varieties of intermediate goods. This equilibrium pattern will be one in which there is intra-industry trade only. The trade pattern is illustrated in figure 1, it is seen that producers of intermediate goods in country 1 and country 2, respectively, supply the producers of final goods in both countries.
The crux of the matter is that foreign trade in comparison with autarky determines a greater market and consequently an increase in the supply of varieties of intermediate goods. Hence, the trade is characterized by pure intra-industry trade and determines an increase in the number of varieties of intermediate goods, whereby the individual producer comes closer to the ideal intermediate goods (Lüthje, 2001b and 2003). Accordingly, the equilibrium level of the
final good increases, and the price of the final good are reduced, whereby the consumer utility is increased (see Lüthje, 2001b: 404). Consequently, the equilibrium solution predicts the general pattern of trade and the level of trade, but not which specific varieties of the intermediate goods that will be produced in each country.

In the given circumstances intra-industry trade will also take place concerning the final goods. In figure 1 this is illustrated by the fact that the producers in each country supply the customers in each of the countries. Hence, the circumstance that intra-industry trade in intermediate goods increases the final good productivity and this determines an increased sale to the consumers in both countries. Choosing intermediate goods from country 2, the final goods producers can enhance their production effectiveness for the benefit of not only the consumers in country 1, but also in country 2.

7. Some Empirical Findings

As a result of the above vertical specialization between identical countries is in theory grounded in the need for ideal
intermediate goods, and Lüthje (2000) argues that a considerable part of foreign trade between the industrialized countries is characterized by intra-industry trade in intermediate goods. But the motives for conducting this trade and the actual choice of a supplier of an intermediate product are not revealed. The aim of the following section is to see whether the producers are in fact choosing the intermediate goods that are closest to the ideal intermediate good by looking at the extent to which the producers are aware of alternative suppliers. We would like to stress that the aim is not to find any correlation of variables or to test any hypothesis, but merely to find empirical support and indication for further theoretical development.

For this purpose we have chosen a Danish survey of international industrial purchasing. The Danish economy is characterised by being very open but relatively small, which makes the actors quite dependent on not only supplies from elsewhere, but also exports owing to a small domestic demand. The survey consists of a sample population, where firms were selected within three geographical areas in Denmark. The unit of analysis was the firm, and the focal
decision process concerned the firm's most recent choice of supplier. In order to improve the response rate and reliability, the sample only included manufacturing firms and firms with a specific person in charge of purchasing. 105 firms constitute the sample, which is equivalent to a response rate of 40%. The results show that international purchasing is commonly used in the manufacturing companies no less than 85% of the interviewed companies/firms state that they are presently purchasing abroad. For a full description of the survey please refer to Servais and Jensen (2001).

The survey reveals that international purchasing holds a relatively large share of the small and medium-sized companies’/firms’ purchasing budget and is mainly focused on the European market, and so is the same firms’ export. Especially table 1 shows that both Germany and Sweden are two very important import and export markets to Danish firms, and in addition to that they are the two closest markets producing very identical products for Danish firms, the UK is somewhat in between, Norway, France and the US are important export markets, whereas the Netherlands and Italy are important import markets.
Table 1 - Most Important Import and Export Markets for Industrial Products

<table>
<thead>
<tr>
<th>Countries</th>
<th>Export Count</th>
<th>Export %</th>
<th>Import Count</th>
<th>Import %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>34</td>
<td>46.6</td>
<td>53</td>
<td>44.9</td>
</tr>
<tr>
<td>Sweden</td>
<td>13</td>
<td>17.8</td>
<td>18</td>
<td>15.3</td>
</tr>
<tr>
<td>Norway</td>
<td>9</td>
<td>12.3</td>
<td>na</td>
<td>-</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>5</td>
<td>6.8</td>
<td>9</td>
<td>7.6</td>
</tr>
<tr>
<td>France</td>
<td>3</td>
<td>4.1</td>
<td>na</td>
<td>-</td>
</tr>
<tr>
<td>USA</td>
<td>3</td>
<td>4.1</td>
<td>na</td>
<td>-</td>
</tr>
<tr>
<td>Netherlands</td>
<td>na</td>
<td>-</td>
<td>8</td>
<td>6.8</td>
</tr>
<tr>
<td>Italy</td>
<td>na</td>
<td>-</td>
<td>7</td>
<td>5.9</td>
</tr>
<tr>
<td>Other countries</td>
<td>6</td>
<td>8.3</td>
<td>23</td>
<td>19.5</td>
</tr>
<tr>
<td>Total</td>
<td>73</td>
<td>100</td>
<td>118</td>
<td>100</td>
</tr>
</tbody>
</table>

As to the products sourced from foreign suppliers the survey shows some 21% purchased final products to be sold to other industrial customers, 3% purchased services or production equipment, 28% purchased components and parts, and 47% sourced materials from foreign suppliers. However, a thorough investigation into the latter section reveals that the actual product obtained was an intermediate product, which leads us to conclude that nearly 60% of the sourced items/products could be labeled as intermediate goods.
Previous we assumed that knowledge about alternative suppliers plays an important role in the effort to choose the intermediate good that is closest to the ideal intermediate good. The survey shows that nine out of ten firms had knowledge about alternative suppliers when they chose the actual supplier and 65% of the firms knew about alternative foreign suppliers. There are some clear indications that the firms to a high extent are open towards foreign suppliers, which indicates a high degree of willingness to conduct a vertical specialization in the production across identical countries. An important aspect is the difference between the chosen supplier and the alternative intermediate producers. Nearly half of the firms in the survey perceived a large difference between the alternative intermediate goods, one third experienced some difference and only app. one quarter of firms did not perceive any difference. In almost 64% of the cases the intermediate good has to be adjusted to the production process, and in 35% of the cases the product is adjusted to a large degree. Hence the chosen intermediate good is not necessarily identical to the ideal intermediate good but still demands an adaptation to the production process.
Table 2 indicates that the trade in intermediate goods causes an increase in the equilibrium level of the final good and a reduction in the price of the final good. It also indicates that the intermediate good has a positive impact on the production process, the total revenue and the final product and that this impact influences the competitiveness of firms significantly.

Table 2 - Perceived Impact on the Firm of International Sourcing (Percentage)
(Note: N = 105; Missing = 5)

<table>
<thead>
<tr>
<th>Statement</th>
<th>To a very high/ to a high extent</th>
<th>To some extent</th>
<th>To a lesser extent/ not at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>The product influences the production process</td>
<td>42</td>
<td>16</td>
<td>42</td>
</tr>
<tr>
<td>The product influences the total revenue of the firm</td>
<td>51</td>
<td>26</td>
<td>23</td>
</tr>
<tr>
<td>The product influences the end-products of the firm</td>
<td>73</td>
<td>27</td>
<td>24</td>
</tr>
<tr>
<td>The product influences the overall competitiveness of the firm</td>
<td>72</td>
<td>15</td>
<td>13</td>
</tr>
</tbody>
</table>

8. Conclusion

As stressed in the introduction there has been a growing concern on what should be the conceptual domain of international business. Toyne (1989) argues that the core
should be international exchange as it constitutes the product of joint decisions made by two or more actors based in different countries. The main focus in international business has however been on the sales side of the firm and not on the purchasing side of the firm. As highlighted by Lye and Hamilton (2000) it is important to study both sides and the interaction between the two sides. In this paper we have focused on firms international sourcing of intermediate goods and the exports of the very same firms. We have seen that the export of final goods is influenced by the choice of intermediate goods. Therefore we have focused upon the existing gap between foreign trade literature and international business literature. A key component in the competitiveness of industrial firms is their ability to focus on the core competence of the firm and when firms pursue this specialization or focus strategy it leads to an enhanced demand for specialized intermediate goods.

Empirical findings show a connection between the demand for final goods and the demand for intermediate goods. This connection is, however, only vaguely researched. So our study calls upon further research on this issue and in
particular on the vertical specialization between countries and the implications of this on the final goods producers import and export.

Our study also points to the capabilities of the firm to conduct international sourcing, clearly one must expect some differences among firms in their search capability to find and negotiate with foreign suppliers; hence what is written about firm export performance (Lages, 2004) could easily be relevant in the case of firms import performance.

A final aspect is the process that leads to vertical specialization. Several authors (e.g. Porter, 1998) emphasised the importance of industrial clusters/districts for enhancing innovation and it is relevant to highlight the possible coherence between the innovations within a district and the potential customers outside the district i.e. foreign buyers. If firms within the district have a somewhat slower internationalisation it is possible for foreign buyers to become more active and hence conduct international sourcing aimed towards these districts in order to exploit the local innovation potential. In our opinion these could be highly relevant for future research.
REFERENCES


