The Internationalization Process of Danish Firms

Gradual Learning or Discrete Rational Choices

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- gradual learning or discrete rational choices?

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Abstract

The Uppsala Internationalization model has greatly influenced Nordic research on the internationalization process of firms. In this article, the Uppsala model is tested on Danish empirical material. The Danish firms largely follow a sequential development as regards the geographical dimension, where, typically, they set up in culturally close markets first and later set up in the more distant markets. On the other hand, the firms seem to follow to a less extent a pattern of sequential expansion of market commitment on the single foreign markets, just as a surprising number of establishments are set up without previous activity on the market. Crucial differences cannot be found between the establishment pattern abroad of large and small firms. The Uppsala model in itself cannot explain the internationalization pattern of the Danish firms, which is why the article advocates that the internationalization process should be understood as an interaction between internal conditions in the firm ("learning" processes), external competitive conditions and more basic economic factors (assessment of market potential).

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INTRODUCTION

In this article, the internationalization process of Danish firms will be examined on the basis of the Uppsala Internationalization model, called the Uppsala model. This internationalization model has greatly influenced business economics research in the Nordic countries, including Denmark (see, for example, Strandskov, 1987; 1994).

The Uppsala model will first be discussed and criticised, and then aspects of the model will be empirically tested on data about the establishment of Danish firms abroad. The purpose of this test is to examine how far the Danish firms follow the typical internationalization course asserted by the Uppsala model.

Information about the establishment of Danish firms abroad has been gathered through a comprehensive questionnaire study - Etableringsundersøgelsen (the establishment study) 1991 - which included all Danish firms with establishments abroad in 1990. The subsequent analysis includes a total of 195 Danish firms with, together, 704 establishments abroad. The data material contains information about the foreign establishment activity of Danish firms, including the function of the establishments, when the establishments were made, how they were established and to what extent there had been any preceding activity in the country in question etc. (for further presentation of data and a discussion of method, see

Pedersen, Schultz & Vestergaard, 1993).

THE UPPSALA INTERNATIONALIZATION MODEL

The Uppsala internationalization model was launched in the middle of the 70s by business economists at Företagsekonomiska Institutionen, Uppsala University (Johanson & Wiedersheim-Paul, 1975; Forsgren & Johanson, 1975). It was launched primarily as a criticism of the theories at the time, which tried to explain direct investments, but it has since been developed as a more independent model to explain the sequential steps in the direction of increased foreign commitment (Johanson & Vahlne, 1977; 1990).

The Swedish business economists criticised the existing theories because they were too static and because they toned down the problems of cultural distance in relation to the foreign markets (including lack of knowledge of consumer preferences, legislation, supplier structure etc.), and that they overlooked the internal prerequisites needed so that firms can handle international activities (human, organizational and financial resources).

An essential starting point for the Uppsala model is that the single internationalization steps cannot be viewed independently of each other. The firms' choice of the form of market operation on a market cannot be viewed independently of the firm's preceding activities on the market, and the firm's choice of market cannot be seen independently of the market experience that the firm has already gained. The analysis unit in the Uppsala model is all <u>the total internationalization process,</u> and not the isolated changes in the course of internationalization. The Uppsala model tries to identify the general driving forces behind the incremental internationalization process, while other theories focus on the discriminating factors in the single changes in the internationalization process (among others, the Internalization theory).

The Uppsala model claims that the internationalization process for small and medium-sized firms is usually a long, slow and incremental process. The process has two dimensions, partly a geographical/cultural dimension where the establishments move from culturally close to more distant markets, and partly a "commitment' dimension, where the form of market operation becomes steadily more demanding. In its description of internationalization as an incremental "learning" process, the Uppsala model is primarily based on Penrose (1959), Cyert & March (1963) and Aharoni (1966). The description of the gradual geographic expansion from the domestic market over close market to culturally distant markets is strongly inspired by Vernon's (1966) product-cycle theory. The description of the sequential development in the form of market operation, however, seems to be an original Swedish contribution (Turnbull, 1987, p. 23).

The Uppsala model includes a descriptive (inductive) part and an analytical and postulating (deductive) part.

The descriptive part of the Uppsala model is linked to the observation of the course of internationalization in four Swedish concerns (Johanson & Wiedersheim-Paul, 1975). On the basis of 34 observations ("establishment chains") it was noted that, before the production subsidiary, the four multinational firms who carried out the subsidiary had had activity on the respective markets in the form of export agents and/or sales subsidiaries. On the basis of 63 observations from the same four companies, it was further noted that sales subsidiaries in most cases (namely 56 out of 63) had been preceded by export agents.

On this basis, Forsgren & Johanson (1975) drew up in their textbook "Internationell Företagsekonomi" (International business economics), a matrix figure illustrating the two-dimensional, step-wise course of internationalization for small and medium-sized firms. The two dimensions were: The geographic expansion towards markets with steadily greater cultural distance and the increasing "commitment" as regards the form of market operation, which falls in 4-5 steps: sporadic export, export agent, sales subsidiary, production subsidiary (first assembly production and later with full-fledge production).

INSERT FIGURE 1

Among other things, it can be seen that license production, which according to Internalization theory is the alternative to production abroad, is not treated as a form of market operation in the Uppsala model. The same applies to strategic alliances, franchising and management contracts. These forms of market operation are also difficult to place on the Uppsala model scale. Does license production need for example a greater commitment than an agreement with an export agent? The problems with handling forms of market operation where the production rights are handed over to other firms illustrate the focus of the Uppsala model on the sales function.

The analytical part of the Uppsala model (Johanson & Vahlne, 1997, 1990) tries to explain why the internationalization process is incremental for the small and medium-sized firm. The critical factor is the risk perceived by the firm (the decision makers) in investing in the market (market risk) which is a product of uncertainty and market commitment. The subsidiary with its irreversible, country-specific investments represents a high degree of market commitment. Uncertainty about the running and rentability of the contemplated subsidiary must therefore be correspondingly low to achieve an acceptable low degree of market risk. On the other hand, service of the market by an agent or a distributor implies a low degree of market commitment, which is why a high degree of uncertainty can be allowed, without the market risk reaching an unacceptably high level.

The Uppsala model is basically a learning-based model, because it postulates that investment uncertainty can only be reduced by acquiring concrete market knowledge, which can only be done through activities on the market (experimental knowledge). This learning-based explanation of the internationalization process is explicitly formulated in the model:

"International expansion is inhibited by the lack of knowledge about markets and such knowledge can mainly be acquired through experience from practical operations abroad." (Forsgren & Johanson, 1992, p. 10).

The Uppsala model does not give a real explanation of *why* direct investments are made. It does not explain why the export agent cannot be regarded as a final form of market operation. And why the firm necessarily has to move "up" the steps towards the production subsidiary. The Uppsala model limits itself to referring to a desire, not further specified, for "control" in the international firm.

CRITICISM OF THE UPPSALA MODEL

The most important point of criticism of the model is that other factors, such as market potential and competitive conditions are completely ignored in the explanation model. The internationalization process is reduced to a question of the firms' internal resources (market knowledge and experience from foreign activities), while the importance of the external competitive conditions and business possibilities are ignored. There is a lack of basic economic determinants in the model such as market size and potential sales abroad (Hirsch & Meshulach, 1991), as well as more strategic determinants that are linked to the fact that firms are increasingly exposed to global competition, where the competition on one market has spillover effects on other markets.

It is only within recent years (Nordström & Vahlne, 1988; Nordström, 1991), that an attempt has been made to introduce the importance of market size and other economic determinants into the Uppsala model. In this connection, it is also emphasised that modern information technology and the homogenization of the international markets both make it easier to acquire market knowledge from home and to transfer experience from one market to another (Nordström, 1991).

In addition to this, criticism can be levelled at the analytical part of the Uppsala model and its non-fulfilment of essential methodical requirements: the lack of involvement, discussion and rejection of (or delimitation from) alternative explanations and the absence of hypotheses that can be tested.

Summing up, it can be noted that the Uppsala model introduced some new, relevant aspects of the internationalization process, including especially the importance of the firm's internal accumulation of knowledge. But at the same time, it is emphasised that the model is too narrowly based on the "learning" processes, and that other factors such as market potential and global competitive conditions are overlooked. These circumstances can probably also explain why the model at the beginning of the 1990s (Johanson & Vahlne, 1990) is by and large unchanged in relation to the end of the 70s (Johanson & Vahlne, 1977), in spite of the rapid development of theory within international business economics in the intervening period.

EMPIRICAL TEST OF THE UPPSALA MODEL

As previously mentioned, the Uppsala model can be said to fall into two parts: one part the assumption about the sequential (gradual and incremental) internationalization of firms in both geographical and market servicing respects, and a second part, the assumption about the build-up of experience and reduction of uncertainty as the central factor in the decision-making process.

The first-mentioned descriptive part of the Uppsala model is clearly the part that has been best examined empirically. The empirical testing has primarily been done in connection with studies of direct foreign investments, where studies have been made of how the establishment of subsidiaries is placed in the geographic and market servicing sequence. The distinction between the two sequences has typically been between the close markets contra distant markets and between subsidiaries with and without preceding activity.

The general impression of the empirical evidence on the assumption of sequential behaviour in the firms in the Uppsala model is rather confused. A majority of the studies turn out in favour of the sequential assumption, even though the assumption is not unchallenged, empirically (for an overview of the many studies, see Larimo, 1993). In addition to this, there are several studies that are positioned in the "in-between group", where most of the firms are registered as following the sequential pattern, at the same time as there is a considerable group of firms who show "leap-frogging" behaviour (among others, Schultz & Vestergaard, 1987; Pedersen, Schultz & Vestergaard, 1993).

While many "tests" of the sequential behaviour have been made, there are very few studies that have convincingly tested the assumption of the build-up of experience as the central factor in the decision-making process (Sullivan & Bauerschmidt (1990) have studied this assumption). For example, no proper study has been made of whether there are systematic differences in internationalization behaviour in large and small/medium-sized firms, as postulated in the model.

In this article, the Uppsala model will be tested on Danish empirical material. Like other tests of the model (for example Johanson & Wiedersheim-Paul, 1975; Nordström, 1991), the test is based on firms who have reached the stage in the model where they have set up subsidiaries abroad. The analysis unit in the test is the activity that has preceded the establishment of the subsidiary, i.e. the development as regards geography and market servicing that preceded the establishment of the subsidiary. The test of the Uppsala model will include both the sequential development and possible differences in investment behaviour between larger and smaller firms. In the following: 1) hypotheses will be put forward, 2) measurement methods will be stated and 3) analysis results will be discussed.

According to the Uppsala model, firms will first set up in the markets where the geographic and cultural distance is shortest. The following hypothesis can therefore be put forward:

H_1 **The smaller the geographic and cultural distance from Denmark to another country, the earlier in the course of internationalization will Danish firms set up subsidiaries in the country in question.**

The hypothesis is tested by giving every single establishment a ranking number that indicates the order in which each parent company has set up their establishments. Then a variance analysis is done, which tests whether there is systematic variation between countries in the ranking number that the establishments in the country in question have. If

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[*] It is thus not a test of the single steps in the internationalization process, for example which factors stimulate the first export activities (reference should be made to the comprehensive literature about export stimuli), but on the contrary a test of the pattern in the total internationalization process.

there is no systematic variation between countries, or if the variation is found to be different from the expected one, the hypothesis can be rejected, because on the basis of the hypothesis, a systematic variation is expected, where the ranking number on average is lower for countries where the geographic and cultural distance is shortest.

The analysis of variance for this model gives an F value of 6.44 (probability of 0.005), which is significant on the 1% level, which means that there is a clear systematic variation in the ranking numbers of the establishments for the single countries. In the table below, an effort has been made to highlight the systematic variation by grouping the individual countries in significantly different groups (Duncan grouping is used with alpha = 0.1)

INSERT TABLE 1

The table shows that the systematic variation is broadly consistent with the hypothesis. The four countries with the lowest average ranking number are the four neighbouring countries, Norway, Sweden, Germany and Great Britain. Most of the European countries are in Duncan group A, while the overseas countries, USA, Australia and Japan, have significantly higher ranking numbers, because of the fact that they are not in Duncan group A. However, it is surprising that Singapore is in Duncan group A, but this can be partly explained by Singapore's status as a financial centre, which is why the banks have to set up in Singapore early in the course of their internationalization. It is likewise surprising that Holland is down in Duncan group C, but this is probably because Holland, like Switzerland, is the host country for a lot of holding companies, which are set up relatively late in the course of internationalization.

All in all, it must be said that the analysis corroborates the hypothesis that the international activities of the Danish firms move sequentially from the culturally close markets to the more distant markets.

The Uppsala model likewise claims that there is a sequential expansion of commitment in the single markets. The individual firm will go from forms of market operation that need very limited market commitment to steadily more demanding forms of market operation. Specifically, it is pointed out that firms will adopt the following sequence in the forms of market operation: sporadic export, export agent, sales company and production company. The Uppsala model also claims that only firms with great international experience would "skip" some of the sequences, for example by setting up subsidiaries abroad without preceding activity in the market in question (i.e. without having exports or other form of sales on the market). The following hypothesis can thus be put forward:

H_2 **Establishments without preceding activity will be set up later in the course of internationalization than establishments with preceding activity.**

The hypothesis is tested in the same way as above by making an analysis of variance that tests whether there is systematic variation in the ranking number for establishments that were implemented with and without preceding activity in the market in question before the actual establishment. The preceding activity includes export via a home-based sales force, export agent and possibly other forms of establishment. If the hypothesis is to be confirmed, the ranking number must be found to be systematically higher for establishments without preceding activity than for establishments with preceding activity in the market.

The whole analysis of variance gives an F value of only 0.55 (probability of 0.42), which does not fulfil the requirement of a 5% significance probability. This means that no systematic difference can be found in the ranking number for establishments with and without preceding activity. Table 2 shows the Duncan grouping for sales and production establishments respectively.

The table shows that the average ranking number, as expected, is higher for establishments without preceding activity than for establishments with preceding activity. This applies to both sales and production establishments. But nevertheless, the variation is so small that significant differences cannot be demonstrated, as postulated by the Uppsala model.

INSERT TABLE 2

It can also be seen that many establishments were set up completely without preceding activity (32% of the sales subsidiaries and 46% of the production subsidiaries). Among the sales subsidiaries with preceding activity in the market in question, there are 74% that were preceded by export agents or similar, while 26% were preceded by export via a home-based sales force. And among the production subsidiaries with preceding activity, there were 35% that were preceded by sales subsidiaries, 40% that were preceded by export agents and 25% that were preceded by exports via a home-based sales force.

The results confirm up to a point that there is a sequential expansion of market commitment, in pace with the building up of market experience, but at the same time, the analysis indicates that this expansion of market commitment occurs in a considerably more differentiated way than the Uppsala model suggests.

In the following, the discussion and the empirical test will deal with whether significant differences can be found between the establishment pattern in large firms and small firms. The Uppsala model will here claim that, on account of greater aversion to risk and fewer resources, the small firm will take smaller steps in the course of internationalization. Since establishment abroad is not just a question about knowledge of the market, but also a question of acquiring experience in the management of subsidiaries, the Uppsala model can be interpreted to mean that the large firm will typically have access to more resources (including management experience) and be less averse to risk, because their activities are more differentiated. The large firm will therefore at a relatively early stage be able to "skip some steps" in the course of internationalization. According to the Uppsala model, the large firms will therefore set up establishments without preceding activity considerably earlier in the course of internationalization than the smaller firms. The following hypothesis can therefore be put forward:

This conclusion covers the group of Danish firms with establishments abroad, while, possibly, other patterns can be found among the Danish export firms that can corroborate the Uppsala model.

H$_3$ **Firms that set up establishments without preceding activity will be larger than firms that set up establishments with preceding activity.**

The hypothesis is likewise tested with an analysis of variance. Here the test is whether there is systematic variation in the size of firms that set up establishments with and without preceding activity, respectively. If the hypothesis is to be confirmed, the firms that set up establishments without preceding activity must be found to be systematically larger than the firms that set up establishments with preceding activity.

The analysis of variance gives an F value of only 0.21 (probability is 0.64), which is far from the requirement of a significance probability of 5%. It is also shown, completely contrary to expectations, that the average size of the firms that set up establishments without preceding activity are smaller (1,579 employees) than the firms that set up establishments with preceding activity (1,694 employees). Somewhat surprisingly, no systematic differences between the large and small firms in the data material can thus be found as regards the establishment pattern and aversion to risk.

A possible explanation is that previous studies have shown that there are two different types of very internationalized firms in Denmark (Pedersen, Schultz & Vestergaard, 1993).

The firms in the study range in size from 20 employees to over 2,000 employees. For a more detailed description of the size distribution, see Table 5 in Pedersen, Schultz & Vestergaard 1993.

There are the large Danish firms, who have successively built up considerable activities abroad over the years, and then there is a new type of small young firms, who right from the start have a very international aim and set up establishments abroad at an early stage. The former type of firm has largely followed the sequences of the Uppsala model, while the latter type has "left out" several steps in the chain, and established subsidiaries in markets where they had not previously had sales.

The fact that firms increasingly set up abroad through acquisitions can also be a contributory explanation of the surprising result. Over 20% of the foreign subsidiaries of the Danish firms were set up by acquisitions of existing firms, and in the last decade, this share has grown very strongly (Pedersen, Schultz & Vestergaard, 1993).

Several foreign studies have come to similar results, so they support the above mentioned explanations. In a study of the internationalization process for young, technology-based, Swedish firms, Lindqvist (1991) found that (the young technology-based) firms went through the course of internationalization more quickly (and not, as expected, more slowly) than the large Swedish firms. She explains this by the fact that it was necessary for the technology-based firms to speed up internationalization, because they were exposed to global competition. In a comprehensive study of the connection between the size of firms and the export intensity in Italian firms, Bonnaccorsi (1992) found that there was no essential difference between the export intensity in small and large firms, which is why the small firms were not appreciably hindered in their export activities by the lack of internal resources. He explained this surprising result by the fact that the small firms had great flexibility, that the export barriers are limited after all, and that the small firms often get together and support each other in exports.

All in all, the results indicate that the differences in the course of internationalization for large and small firms are relatively limited, and that they will probably become smaller and smaller in the future. The differences that could be found can for the most part be attributed to factors other than differences in the size of firms (such as technology intensity, market potential and international competitive conditions).

CONCLUSION

This article has examined the internationalization process of Danish firms, primarily by testing on Danish empirical material some of the hypotheses that can be deduced from the Uppsala Internationalization Model.

The Uppsala model is the only real attempt made up to now to put forward a dynamic theory (or model) that can explain the internationalization process of firms. The Uppsala model comprises two central elements. One, a mainly analytical part, which asserts that the course of internationalization is an incremental process that is a result of two separate, but closely linked, processes: the building up of specific market knowledge and the expansion of market commitment, which together create a better basis of information, whereby uncertainty and risk are minimized. The other is a predominantly descriptive part, which, on the basis of empirical studies, asserts the sequential nature of the course of internationalization, both in the geographical spread (from culturally close to more distant markets) and in the extent of commitment on the single markets (with the following sequence: sporadic export, export agent, sales company and production company).

The analysis based on Danish data corroborates that the Danish firms have extended their international activities sequentially as regards the geographic dimension. It is clear that internationalization is begun in the culturally close markets. Norway, Sweden and Germany stand out as being the markets where the Danish firms typically set up first. After these come the main part of the northern European countries in the next group, while the southern European and overseas countries follow in the third group.
It is also corroborated that firms sequentially extend their market commitment, but this gradual extension of market commitment is done in a more varied way than suggested by the Uppsala model in its sequence from direct export over export agent to the establishment of a subsidiary.

The hypothesis about the minimization of risk and uncertainty as the crucial driving force in the internationalization process is poorly supported in the data material, because it emerges that the small firms go through the course of internationalization just as quickly as the larger firms.

It can be concluded that the Uppsala model is only a partial explanation of the internationalization process of firms, where a more general theory would have to include other explanations of the internationalization process than the "learning" process in the firm. A more general theory would also have to include factors such as the firms' assessment of the market potential and the global competitive conditions, because these, too, are important driving forces in the internationalization process.

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Table 1 Analysis of variance of ranking numbers for establishments in different countries,.

Country	Number of establisments	Average ranking number	Duncan grouping
Norway	56	2,68	A
Sweden	75	3,08	A
Germany	95	3,11	A
Great Britain	112	4,23	A B
Switzerland	16	4,31	A B
Finland	20	4,70	A B C
France	45	4,73	A B C
Singapore	13	4,92	A B C
Belgium	17	5,06	A B C
			B C
			B C
			C D
			C D
			D E
			E

The analysis was conducted with 704 establishments spread among 55 different countries, but the table shows only the 15 countries that have more than 10 establishments.

The way the Duncan grouping is to be interpreted is that if two countries have different letters (A-E), then the establishments in the two countries have significantly different ranking numbers, while this is not the case if the countries are in the same Duncan group.

USA	62	6,27	
Spain	23	7,13	
Holland	29	7,48	
Australia	14	7,50	
Italy	11	10,00	
Japan	14	12,36	

Table 2 Analysis of variance of ranking numbers for different forms of preceding activity.

Activity in the particular market	Sales subsidiary			Production subsidiary		
	Establis-ments	Average ranking number	Duncan gruping	Establis-ments	Average ranking number	Duncan gruping
With preceding activity	230	4.98	A	77	5,01	A
Without preceding activity	109	5.77	A	65	5,54	A

Figure 1 The various stages in the Uppsala model