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**NOMADIC FIRMS IN A GLOBALIZING ECONOMY:
A COMPARATIVE STUDY**

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Abstract:

Recent location behaviour of modern multinational firms appears to exhibit a high mobility pattern with a strong tendency towards footlooseness. The spatial-economic dynamics - often across the border - of firms is encapsulated in the term 'nomadic firms'. This paper addresses the issue of nomadic behaviour of firms against the background of globalisation trends. After a critical discussion of globalisation phenomena and a review of the literature on nomadic entrepreneurial behaviour, the paper sets out to formulate a series of relevant hypotheses of spatial relocation behaviour of international firms in a globalizing network economy.

The analytical framework is tested by means of empirical data originating from interviews among actual or potential nomadic firms, in both The Netherlands and abroad. Infrastructure quality and geographical accessibility appear to play an important role, but also opportunity seeking behaviour of multinational firms has a prominent place in nomadic behaviour. The results of the structured interview rounds among firms are more vigorously analyzed by using a recently developed method for qualitative classification and explanation, viz. rough set analysis. The results from the latter method confirm to a large extent our previous findings.

1. Setting the Scene

The past decade has witnessed an avalanche of changes in industrial organisation, both locally and globally. The face and position of modern industry has drastically altered. Business linkages have since the 1980's increasingly assumed the form of internationally (or interregionally) operating industrial networks (see for a review Von Raesfeld Meyer 1997). The drive towards a network economy has exerted a profound impact on the volume and structure of international trade and service delivery (containerisation, outsourcing, back to core business etc.). In addition to shifts in the internal-external network configurations of modern firms, we also observe that the role of transaction costs for intermediate deliveries and intra-firm decision-making is gaining much more importance (see Williamson 1975).

In principle, the economic organisation of modern industries can be characterized by three alternative arche-types, viz. **market**, **hierarchy** and **networks** (see Nijkamp and Vermond 1996). A market configuration takes for granted that a firm buys its necessary inputs in a competitive way from other producers as intermediate goods on the market, thus incurring high risks and transaction costs of ad hoc contracts. A hierarchy is an organisational structure where (a significant part of) the industrial production is carried out under the control or inside the own corporation. And finally, a network is an organized industrial structure characterized by exchange relations between actors based on business interactions and mutual linkages (see for an extensive description Hakansson 1987).

Network theory and analysis recently also have become a fashionable research topic in the spatial sciences like geography and regional science. Networks are essentially an intermediate form between the market and the hierarchical industrial structure (see Davidson 1995). The benefits of a network originate from synergy as a result of economic complementarity in the activities of firms and their interactions. Efficiency is then enhanced by a combination of both competition and cooperation inside the network, supported by high quality communication potentials and regular interactions among interdependent partners (see also Kamann 1993). Thorelli (1986) and Hakansson (1987) emphasize in particular the long-lasting structural effects of a network, even though the individual firms' position in a network may change; this position is a market asset built up by investments in manpower, communication time and scarce financial means (see also Hinterhuber and Levin 1994). It should also be added that networks may exhibit different structural forms: vertical, horizontal or diagonal,

depending on the firm's internal organisation and competence as well as on the external market conditions.

The drive towards an industrial network economy has been accompanied by a drastic change in the spatial-economic position of cities, regions and nations all over the world. There has been a complex and turbulent movement induced by indigenous growth and spatial connectivity, which has influenced the internal functioning of cities and regions and which has also placed network infrastructure in the centre of spatial dynamics (see also Castells 199...). Consequently, structural change and differential dynamics (a simultaneous occurrence of slow and fast motion) have become a major feature of economies at all spatial levels, while stability is increasingly substituted for spatial-temporal transformation.

After the era of the Industrial Revolution in the second part of the last century which was marked by new ways of organizing production and transport on the basis of new technological innovations favouring last-scale production for an opening world market, we observe in the last part of our century a new phase in the history of our developed world, viz. a Network Revolution marked by interconnected modes of production and transport and communication processes favouring neo-Fordist types of production (see Lagendijk 1993). As a result, we observe nowadays drastic changes in the spatial-economic, sectoral and organizational structures of modern industries, especially in sectors dominated by technological innovation.

Fluidity and mobility have become the landmark of modern networked firms in a Schumpeterian era, where innovation and economic transformation are the characteristics of competitive opportunity seekers. As a result, research in industrial dynamics has gained much popularity in the past decade (see for a review also Bertuglia et al).

Especially in a European context this industrial transformation process has a pronounced meaning, as the European unification process and the opening up of Central- and Eastern-Europe has shaped the conditions for a mobile network economy. The increasingly free exchange of persons, commodities and capital has far reaching implications for intra-European trade and transport. The introduction of the European Monetary Union will reinforce the tendency toward further spatio-economic integration. Recent policy documents show that trade and transport in Europe may be looked at from three partly complementary, partly competing policy angles: the need for competitive efficiency, the need for geographical accessibility for all regions in Europe, and the need for an environmentally sustainable

development (see also Reggiani et al. 1997). These three issues will now succinctly be discussed.

Competitive efficiency is at the heart of current European transport policy, where massive investments in Trans European Networks (TENs) and in missing links serve to support the goal of economic and geographical integration. But also at local, metropolitan and regional scales formidable investment efforts are foreseen in order for main players to survive in a competitive world market based on global networks. Efficiently operating transport networks in the former segmented European space-economy are critical success factors for the competitive edge of Europe in a global setting.

There is also a major concern on geographical accessibility of less central regions in Europe. The low density of transport needs in many rural and peripheral areas has been a permanent source of concern for public authorities, from the viewpoint of both the service quality offered by public transport operators and the objectives set for regional development. A look at the historical development of European infrastructure networks (road, rail, air, waterways) makes immediately clear that the most important links were first constructed between major centres of economic activity. The connections with rural and peripheral areas were in all cases delayed and usually less developed. This is a clear case where efficiency motives and equity motives are in conflict with one another. In the emerging European welfare states however, the rights of the rural and peripheral areas have been recognized as legitimate claims, even though the economic feasibility of such 'extra-central' connections was often debatable. But the equity argument - often reinforced by the 'generative' argument (i.e. an infrastructure - once constructed - will attract new activities) - has played a major role in the political debate on subsidies for transport for the 'mobility deprived' in remote areas.

And finally, there is a more recent major policy concern on the question of whether transport will be devastating for environmentally sustainable development. Our mobile society fulfils many socio-economic needs, but calls at the same time for social and political change in order to attain sustainable mobility (see for a review Nijkamp et al. 1998). Both passenger and goods transport have increased rapidly in the past years, and for the time being there is no reason to expect a change in this trend. Some European scenarios even forecast a doubling of transport in one generation. This development provokes intriguing questions on the external (social) costs of transport, such as congestion, pollution and safety issues. Apart from local problems such as congestion or noise, the global environmental implications of transport are

increasingly becoming a source of major concern (see Nijkamp et al. 1998).

After the above sketch of the scene in which industrial dynamics and transport policy are increasingly marked by network configurations of a material and immaterial nature, the question arises: what is the likely mobility pattern of modern industries in the era of innovation, globalisation and networking? Will fluidity and mobility become a dominant feature in spatial industrial networks? The present paper will address the issue of spatial relocations of firms from the viewpoint of internationalisation of business life. The aim of this paper is to trace and investigate the origins of nomadic location behaviour of firms and to analyze the possible implications of this nomadic tendency for Dutch - and European - infrastructure policy. In particular, this research concentrates on two policy concerns:

- i) how can nomadic companies be persuaded to locate and stay in The Netherlands by means of an improvement of the supply of infrastructure facilities;
- (ii) what consequences for infrastructure use (e.g., transport flows) might occur if those nomadic companies choose to leave the country in large numbers in favour of a location elsewhere?

Important in the relation between nomadic relocation and infrastructure policy is the extent to and the time in which nomadic companies - often regarded as the most critical, foot-loose, internationally operating, and cost-sensitive companies - offer (indirect) signals to infrastructure policy-makers that they are considering the possibility to relocate abroad. The foot-loose relocation behaviour of nomadic companies will inform policy-makers in an early phase of infrastructure planning that (part of) of the transport or communication infrastructure might be sub-optimal in the overall location profile of a region or country if compared with locations elsewhere. The relocation behaviour of nomadic firms might also give important information about future developments in the volume and direction of transport flows, the transport modes used, and at the end about changes in industrial heartlands. From a careful monitoring and analysis of such trends it may be possible to identify the need for new infrastructure investments.

After these introductory background observations, we will start our paper with a preliminary survey of the literature on nomadic location behaviour of firms (Section 2) and proceed then with a macro-economic analysis of international capital and trade flows (Section 3), followed by a micro-economic based survey of foreign companies in The Netherlands as well as of Dutch firms with subsidiary companies abroad (Sections 4 and 5). Next, the

relationship between nomadic behaviour and infrastructure is analyzed in greater detail (Section 6). And finally, we end the paper with some relevant conclusions and policy strategies (Section 7).

2. Nomadic Firms in a Global Economy: a Survey

In the scientific literature, 'nomadic location' behaviour is not a generally accepted or widely used expression. Nevertheless, several basic principles of nomadic location behaviour can be found in the recent globalization literature and in other related theories (such as network theory). It is commonly recognized that most important reasons why firms move abroad or establish subsidiary companies elsewhere are market expansion (preferably in emerging markets) and cost reduction (in competitive markets). World-wide deregulation and technological harmonization trends have greatly simplified the possibilities of entering new foreign markets. However, it is also noteworthy that firms are increasingly confronted with foreign competitors on their own home markets. To survive in this global race characterized by international competition, firms are forced to economize and to grow in order to benefit from scale and scope advantages. Large firms are, for instance, able to reduce the share of their R&D expenditure per product by allocating them over larger product volumes (economies of scale). In view of severe competition, firms have to optimize also their production process by strict cost reduction strategies. This optimization of the production process may also prompt a relocation of activities over space. International firms reallocate nowadays their activities on a world-wide level of strategic behaviour. In this relocation process, firms are restricted by source-related and market-related activities. However, an increasing number of activities becomes more and more foot-loose and can, in principle, be undertaken almost anywhere between the source and the market place. Those foot-loose activities are eligible candidates for nomadic location behaviour. Significant cost reductions can, for instance, be realized by outplacement of labour-intensive production processes towards low wage countries such as Eastern European countries and various Asian countries.

In the context of market-related activities, large cost reductions can often be achieved by introducing large scale distribution network such as European Distribution Centres (EDC). These activities may clearly show nomadic location behaviour; to reduce the logistics costs, the geographical location within the European infrastructure networks will

then be of critical importance.

Nomadic company activities will not easily settle down in a given area; those activities do not necessarily need to be regionally embedded. As a consequence, new investments in a given place (which will reduce geographical mobility) will be kept low. This means that a company often prefers to start a new subsidiary instead of entering a market by a take-over or merger. It often also prefers to rent rather than to buy real estate. Finally, the company is usually less interested in offering its products for the demand of the specific local or regional market.

In summarizing the literature on nomadic behaviour, we find that international relocation behaviour is 'nomadic', when:

- it is a temporary (re)location;
- few durable investments of a fixed or lumpy nature are involved;
- there are clear cost reductions at stake in the (re)location;
- the (re)located activities are foot-loose;
- the company is not clearly embedded in the local or regional economy;
- the company is part of an international network of companies producing for the international market.

To sum up, nomadic companies can be characterized as 'spatial opportunity seekers'.

To make a clear distinction between a nomadic (re)location and other international (re)locations, the following typology of nomadic (re)locations may offer a meaningful analytical framework:

Nomadic relocation

- foot-loose company
- foot-loose activities
- relocation across the border
- creation of a new company or division
- cost reductions
- low capital investments
- labour-intensive production
- production for international market
- international network orientation
- international transport flows

Other relocation

- regionally-oriented company
 - source and market-related activities
 - local, regional or national relocation
 - take-over or merger
 - penetration into emerging market
 - high capital investments
 - capital-intensive production
 - production for local / regional market
 - local / regional network orientation
 - local / regional transport flows
-

The characteristics of nomadic relocations can be categorized in a few prominent, mutually related attributes. The first aspect may be referred to as *foot-loose*. The freedom to relocate at any time can be suppressed by either large investments in real estate, education etc. (high sunk costs), or because the activity is not foot-loose by nature (source or market related). A second feature centers around the notion of *regional embeddedness*. Nomadic companies tend to prevent regional embeddedness not only by low capital investments - as mentioned above - but also by a low administrative or institutional embeddedness. They often prefer to start a new company or division instead of a take-over or merger, both of which may have significant legal consequences (often constraints) in case of a next relocation. The third aspect concerns *cost reduction*. In contrast to the desire to penetrate emerging markets, cost reduction in a competitive environment is the decisive factor to relocate - part of - the company. For example, labour-intensive production processes are relocated towards low wage countries or the assembly of final products may be concentrated in one particular location per continent. By these means, standard products can be adjusted to continental standards (e.g., value added logistics in European Distribution Centres). And finally there is the aspect of the *international dimension*. The firm is usually part of an internationally operating network of firms aiming at producing for a global market.

Clearly, some problems may arise from the implementation of the typology described above. First, there is a number of **ambiguous classes**. We mentioned already that a number of characteristics is mutually related. A more severe problem is that most characteristics are not pure contrasts as suggested in the above typology. For instance, the category 'cost reductions' is placed opposite to 'emerging markets'. In reality, a relocation may be caused by a mixture of both factors. Although cost reductions will be the driving relocation factor for a nomadic firm, that company will also respond to the advantages that emerging markets offer. In such cases the difference between a nomadic and a non-nomadic relocation may have to be expressed by other characteristics. For example, a nomadic company locating in an emerging market would hardly invest in order to relocate within this emerging market, if production circumstances elsewhere in this market would become more favourable.

A second problem is the **order of succession** in the process of international relocation decisions. In general, a company begins penetrating a market by hiring a local agent. After a number of sequential steps (outplacement of representatives, starting a sales and/or distribution network), in a final step (part of) the production activities of the company

are relocated. It seems reasonable to assume that nomadic companies will also use a similar strategy, whereas it seems unrealistic to expect that nomadic firms will spontaneously start up a new company in a completely unfamiliar environment.

After this general exposition on the typical features of nomadic firms, we will in the next section investigate more empirically whether there have been such significant changes in patterns of international trade and transport, that nomadic behaviour may be regarded as a major new development in a globalizing economy.

3. Analysis of Trade and Capital Flows

In this section we will look at some macro-economic trade figures related to The Netherlands in order to examine whether nomadic behaviour clearly shows up in this small open economy. The regions of origin and destination of the trade flows of The Netherlands are quite diverse, but there is a common pattern for in the demand for dedicated infrastructure. The freight flows to and from the whole of Europe (North, East, West, and South) are predominantly transported by lorries. For The Netherlands, this implies a strong demand for well accessible connections to the European road network. However, the trade flows with other continents predominantly take place by sea shipping (low value goods) or aviation (high value goods). This implies also a high demand for a large-scale international sea port and airport.

Table 1 Import and export relations of The Netherlands (expressed as a percentage of the total value of The Netherlands)

	West- Europe	East- Europe	America	North- America	Latin- America	Asia	Australia Oceania
1975	72,1	2,3	4,4	7,1	2,8	10,9	0,5
1977	71,3	2,1	4,9	6,7	2,6	12,0	0,4
1979	72,9	2,3	4,9	6,3	2,6	10,6	0,4
1981	70,4	3,0	4,9	6,9	2,7	11,7	0,4
1983	71,9	3,5	5,1	7,2	2,5	9,4	0,5
1985	73,5	3,0	4,2	7,3	2,7	8,7	0,5
1987	77,3	1,9	3,0	6,4	1,9	9,0	0,5
1989	76,9	2,0	2,6	7,2	1,9	8,9	0,5

1991	78,2	1,7	2,4	6,3	1,7	9,3	0,4
1993	75,4	2,4	2,1	6,4	2,1	11,1	0,4
1995	77,0	2,6	1,8	6,0	2,1	10,1	0,3

Expressed in terms of the value of the traded goods, there appears to be a rather steady increase of the share in the total value of trade flows between West-European countries and The Netherlands over recent decades (see Table 1). However, these figures do not immediately support the conclusion that more attention should be paid to the road network and less to the mainports of Rotterdam and Schiphol. The trade with the other - West - European countries mainly concerns high-value consumer products, whereas trade with developing countries in particular concerns low-value raw materials. The value of the trade does not tell much about the volume of the transport flows. Nevertheless, there is clearly a strong increase: the annual value of the Dutch international trade flows has increased from 175 billion to nearly 600 billion Dutch guilders over the period 1975-1995. These figures are given in current prices, but the rise in trade in fixed prices (i.e. corrected for inflation) remains still considerable. Thus, these figures suggest a growing international orientation of the Dutch economy. Whether this growth can (partly) be explained by nomadic tendencies remains to be seen, as this requires more meso- and micro-based research (see Section 4).

In addition to exports and imports, it is also necessary to pay attention to international capital flows. The development of the international inward and outward capital flows - foreign direct investments - shows for The Netherlands to a large extent the same pattern in volume growth and spatial direction as described above for the trade flows. The flow of foreign direct investments towards low wage countries (like, for instance, developing countries) is relatively small and increasing at a low growth rate. Seen from the viewpoint of the structural and substantial export surpluses, it is no surprise that The Netherlands is a net exporter of capital.

Summarizing, many empirical facts demonstrate that the share in trade and capital flows of The Netherlands with other European countries is by far the largest and increasing at a fast rate. There are no clear indications of a dramatic orientation of the Dutch economy towards the American, Asian or East-European markets. However, inspired by the ideas of globalization, many recent research efforts on international firm relocations have focussed attention on the location of American, Japanese and Korean companies in The Netherlands.

Our findings suggest that it is more meaningful to address the relocation patterns of firms at the intra-European level rather than at the global level outside of Europe. Therefore, in the next section we will pay attention in particular to intra-European relocation behaviour of firms.

4. The Empirical Data Base

As suggested above, nomadic behaviour cannot properly be identified by means of macro-economic indicators. One needs to investigate more thoroughly the determinants of firms’ relocation behaviour from a micro perspective. This is the subject of the present section, in which first a systematic selection mechanism of nomadic firms is offered. The analytical framework is based on the observation that in terms of relocation both the country of origin of the firm and its country of destination may differ (see Table 2).

The first quadrant (I) concerns Dutch firms relocating within The Netherlands and is of no interest for the present research endeavour. Moreover, in the past years, abundant knowledge has already been gathered on these intra-country relocations. The second and third quadrants concern Dutch companies locating abroad and foreign firms locating in The Netherlands, respectively. Not all these relocations are necessarily nomadic. For example, we might have a single relocation, not necessarily followed by another international relocation in a limited period of time. This restriction does not hold for quadrant IV, which concerns foreign firms relocating after some time out of The Netherlands again. It should be noted however, that in our research efforts we were able to trace only one such company belonging to this quadrant.

Table 2 Relocation by country of origin and destination

country of destination	→	The Netherlands	Abroad
↓ origin of firms			
Dutch companies		I	II
Foreign companies		III	IV

After the description of the analysis framework in Table 2, we will now proceed with our empirical work. To examine the impacts of the relocation of foreign companies into The Netherlands and of Dutch companies abroad on cross-border transport flows and related infrastructure demand, various companies have been interviewed. By using a structured questionnaire, a wealth of relevant information could be collected. The following distribution of nomadic firms has been deployed for our empirical analysis (see Table 3).

The firms listed in Table 3 belong to quadrant II or III of Table 2. They have been selected from the general business register of the Chambers of Commerce. All selected companies have recently relocated (after 1990). The *foreign companies in The Netherlands* (i.e., quadrant III) are service-oriented companies located in the central urban area (Randstad) and industrial firms located in areas in the vicinity of the Randstad. First, they were asked to fill out a questionnaire in which they could express their opinions about the importance of some 40 locational factors for their firm as well as the attractiveness score for The Netherlands as a whole on those factors. The scores were given on a five-point scale, for both the time period of the location decision in The Netherlands and for the present situation. This double check was made, since the importance of some of the locational factors for the firm's activities might have changed since its location in The Netherlands. The same holds for the score of The Netherlands as a whole on these location factors. Next, the firms were personally interviewed. In the interviews the following items were in particular researched: general company characteristics, the company network structure, location motives, development of transport flows (inward and outward), and the infrastructure use and demand of the company.

Table 3 List of interviewed nomadic firms

Foreign companies in The Netherlands

- 4 North-American service-oriented companies
- 2 North-American manufacturing companies
- 3 Japanese service-oriented companies
- 3 Japanese manufacturing companies

Dutch companies abroad

- 3 trade companies in Poland
- 2 transport companies in Poland
- 2 service-oriented companies in Poland
- 1 service-oriented company in England
- 1 service-oriented company in Ireland

For the quadrant II of Table 2, the attention was focussed on Dutch firms in Poland, as this country is recently often regarded as a new spring board of Central and Eastern Europe. The Polish pilot study was conducted to analyze the impact of *Dutch firms* relocating toward a region *abroad*. In addition, also some control interviews were held by phone with a foreign company (a truly nomadic company) recently relocated from The Netherlands to England and a Dutch firm that had decided to relocate the majority of its activities to Ireland.

All Dutch companies in Poland are located in the Warsaw urban area, which is the major booming area in Poland. These firms were asked to fill out a questionnaire on the importance of 40 locational factors comparable to those completed by the foreign firms concerned in The Netherlands. The only difference is that they were asked to give the relevant scores for both The Netherlands and Poland for all relevant factors at the time of relocation. In the interviews the same items were the subject of discussion, but greater emphasis was here laid on the changes in transport flows (volumes and directions related to The Netherlands) caused by the firm's relocation to Poland.

Both the survey questionnaires and the structured interview generated a wealth of relevant information, partly of a quantitative and partly of a qualitative nature. The main results will be discussed in the next section.

5. Results of the Company Surveys

In our presentation of the results of both the survey questionnaire and the interview rounds we will address in particular three issues, viz. the company structure, the transportation aspects and the (re)location motives, successively.

5.1 Company structure

Seven of the twelve foreign companies located in The Netherlands and investigated in our empirical analysis appeared to be European headquarters of the company. In Poland none of the companies under consideration is a European headquarter, although for six of the seven companies, the Dutch parent company forms the European headquarter.

Table 4 offers some interesting insights. The network structure of all foreign

companies is at least European; however, only two of the Dutch companies in Poland are part of a world-wide company network. From both types of surveys (i.e., quadrant II and III from Table 2) it turned out that the companies are completely new subsidiaries. Only one case concerns a take-over of an already existing company. Another common feature between the two surveys is the preference for rented premises. Only some 25 percent of the firms possess its own accommodation. Those companies are either manufacturing companies or transport companies. It seems from that more land-extensive companies tend to own company real estate. The land-intensive companies needing e.g., office buildings, such as offices seem to prefer to rent real estate.

Table 4 Distribution and features of nomadic firms

Company structure and feature	foreign companies in The Netherlands	Dutch companies in Poland
European headquarters	7	0 (6)
European network	12	7
world-wide network	12	2
new company	11	7
rented premise	8	5

Most relocations are apparently the result of an expansion of existing activities abroad. This does not necessarily mean however, that those activities were discontinued in the country of origin. It is important to mention that both surveys show that only minor adjustments are made to accommodate the product to the demands of the new market. Those minor adjustments consist of regrouping, re-packing or adding guidelines for use in the correct languages.

A major difference between the two surveys is that foreign firms in The Netherlands have hardly changed their activities, whereas Dutch companies in Poland have increased the range of their activities to a large extent. Foreign companies in The Netherlands have to serve a mature European market, whereas the emerging East-European market in transition offers many unexploited opportunities. The wish of many Dutch companies to have their own - Dutch - management available to them in Poland, seems largely related to exploiting these new opportunities which might not be deemed to be sufficiently effectively covered by local

managers.

5.2 *Transport systems*

With regard to the transport flows and the use of transport systems, both types of surveys point at the same direction. Intercontinental freight transport flows are transported either by sea or by air. The distribution within Europe takes place by road, except for special deliveries, high value products, and/or spare materials which are often transported by air. Rail and inland waterway infrastructure seem to be of marginal importance for nomadic firms according to the surveys. However, one should remember that none of the surveyed companies generates flows of low-value bulk products; for such products, rail and inland waterway infrastructure are often used.

There are however, a number of differences between foreign companies located in The Netherlands and Dutch companies located in Poland. Whereas American and Japanese firms in The Netherlands generate their own activities and trade flows, Dutch companies in Poland are strongly linked to their Dutch parent company. American and Japanese companies develop their own trade flows for independent producers outside of their network structure. The Dutch companies in Poland are dependent on goods flows which are generated and directed by the parent company. Dutch parent companies appear to collect all inputs and distribute those goods to their subsidiary firms in Poland. This spatial pattern of collection and distribution by the parent company can partially be explained by the company policy to keep stocks in Poland low, because tax and customs rights must be paid immediately at the Polish border.

Another important difference between American and Japanese companies in The Netherlands on the one hand and Dutch companies in Poland on the other is that the market area of the first class comprises all of Europe, whereas the market area of the latter is mainly in Poland and its neighbours. Only in the long-term do the Dutch companies in Poland intend to expand their activities by opening new subsidiary firms in, for instance, Russia. It is also noteworthy that, in general, it may be difficult to attract and maintain the internationally operating firms in The Netherlands, since the market area exceeds the area of The Netherlands. The large consumer markets for those international operating firms are predominantly Germany, France and the United Kingdom. However, a number of companies stated that from a strategic point of view, it is an advantage to be located in a relatively small consumer market

in Europe: none of the large consumer markets can claim that the company is located in their markets; and even more important, none of the large consumer markets can complain that the company is located in another large consumer market instead of their own home-market. Thus, from a strategic competitive viewpoint a small country may also have advantages for a nomadic firm.

5.3 *Location motives*

In both case studies related to quadrant II and III of Table 2 the main aim for the companies investigated to relocate across the border is to expand their activities in an emerging market. All companies stated that both the expansion and the entrance into the new market have been successful; so there is apparently a low tendency to relocate the subsidiary firm soon again.

The entrance of companies into the Northwestern European market is of a different magnitude compared to the entrance into the East-European market. The Northwest European market is a developed, mature market close to the point of saturation for standard products, whereas the East European market is a young, undeveloped market in a phase of rapid transition. The particular advantages of the Polish market are the relatively stable economic and political climate. The Polish market is also a good frontier market for expanding into other East European markets.

The entrepreneurial demands concerning the location profile of a region are rather diverse in the case studies related to quadrant II and III. In Poland the entrepreneurs require a stable political, economic, financial - notably currency exchange - climate, and low wages. The underdeveloped infrastructure network, unfavourable customs facilities, legislation, etc. do not restrain Dutch companies from locating in Poland. With regard to the second class of case studies, i.e., location in The Netherlands, the prerequisites of American and Japanese companies are much tighter. They indeed make their selection based on a favourable locational profile like legislation, accessibility in all types of infrastructure networks, customs facilities offered, etc. When The Netherlands would not be able to fulfil all their wishes, these companies would decide relatively easily to relocate within Northwestern Europe. The decision to relocate from The Netherlands to countries such as Belgium, Luxembourg, Germany, and even France and the United Kingdom, seems to be easier than the decision to relocate from Poland to a Baltic state, Russia or the Ukraine.

6. Nomadic Relocation and Infrastructure Policy

6.1 General observations

The relationship between nomadic companies and transport infrastructure has to be seen from two angles. The supply side of infrastructure is of importance in attracting foreign firms to locate in a specific country. The infrastructure supply in The Netherlands is relatively favourable from a European point of view. More important however, is the demand for efficient transportation of goods. Foreign companies locating in the Netherlands will generate transport flows and the input and output flows of these companies will pass through The Netherlands. This generation of transport flows by foreign companies located in The Netherlands will have significant impacts on the volume and the direction of the total transport flows and the use of transport modes in The Netherlands. The reverse effects may show up when companies decide to relocate outside The Netherlands, for instance, towards Eastern Europe or Asia. The related transport flows might then shift in terms of direction of flows (more flows through the eastern part of the country towards Eastern Europe, or more exports instead of imports in sea ports), might change the choice of different transport modes (road instead of inland shipping or rail), or might even bypass the Dutch area (goods are directly transported from the United States towards Poland without trans-shipment in The Netherlands). This all might lead to an under-utilization of the existing and/or planned Dutch infrastructure networks.

For the input and output of transport flows of internationally operating companies, the interregional and international infrastructure networks are of particular importance. One should not forget however, that for commuting, business services and daily deliveries, the local - urban - infrastructure networks are of primary importance. Although the local infrastructure networks did not receive particular attention in the case studies, a number of Japanese and American companies stated that the accessibility of urban areas is of utmost importance for their decision to stay in The Netherlands. In particular, metropolitan accessibility seems to be a critical location factor in the severely congested Randstad area.

6.2 Dutch infrastructure policy

The main target of the infrastructure policy of the Netherlands can be described in two sentences. First, given certain rather strict environmental sustainability conditions, the

mainports Rotterdam and Amsterdam should be given sufficient opportunities to grow. And second, there is a preferential policy concerning the main transport corridors from these mainports towards the hinterland. These corridors should as much as possible be secured from congestion.

This policy is in line with the demands of the Japanese and American companies located in the Netherlands. Their goods must be imported by the mainports and distributed throughout Europe mainly by road. The combination of a seaport and an airport located nearby is especially seen as a strategically important location factor. Apart from the Randstad, this combination of two ports of entry within Europe is found only in Belgium and Northern Germany. Nevertheless, the location of Japanese and American companies in the Netherlands is not certain for ever; several of these companies constantly evaluate critically their geographical location and accessibility with a view to the European markets.

The trade flows of Dutch companies in Poland continue to be directed by the parent company in the Netherlands. The transport flows to Poland use mainly the road, although the Polish road network is of a poor quality. Only high-value goods are transported by air. This observation underlines the importance of efficient road transport corridors from the Netherlands towards the rest of Europe. However, the Dutch parent companies often extract their inputs from the world market. The distribution towards the subsidiary companies takes then usually place afterwards by road transport.

Most firms interviewed intend to expand their activities in Eastern Europe in the near future. If the transport flows continue to be organized by parent companies, one might expect a rapid increase in the volume of the transport flows towards Eastern Europe; these flows may especially pass through the eastern area of the Netherlands.

We may thus conclude that both foreign companies in the Netherlands and Dutch firms abroad highlight the Dutch infrastructure policy, in which much emphasis is laid on mainports and their hinterland connections.

6.3 *European infrastructure policy*

The European infrastructure policy as developed by the European Commission can be summarized by an emphasis on the construction of Trans European Networks (TEN's) for road and high speed rail. Along with the TEN's, the European Commission supports deregulation in aviation and rail transport to increase the efficiency achieved in those networks.

Both case studies related to quadrant II and III of Table 2 show the importance nomadic companies attach to the development of the European road network. Only to a minor extent is aviation used for European distribution of goods. The train and inland waterways play no important role. From a company perspective, in the short-term the further development of the road network seems to be of utmost importance. However, when deregulation in aviation would lead to an abolition of, for example, tax free kerosine, in the longer term, high speed rail lines might also become an interesting substitute for aviation, certainly for business travellers and for the transport of high value goods.

In the two classes of case studies, no heavy industries were included, since these are not foot-loose. It is highly possible that for such industries, inland waterways and rail may be important transport modes.

We may thus conclude that from a European perspective, the Netherlands should be well-connected to the Trans European Networks as propagated by the European Commission. The Netherlands should, from the perspective of the behaviour of multinational nomadic firms, try to secure its relatively accessible position within the European transport infrastructure networks.

7. Conclusions and Policy Strategies

It is well-known that companies generally attach much weight to two types of network infrastructure: (i) long-distance transport infrastructure (TEN's, rail roads, highways, aviation, inland waterways, and sea shipping) considering interregional and international transport, and (ii) high-quality local/metropolitan infrastructure (light railways, hybrid railway systems, orbital motorways, parking facilities etc.) with a view to the daily distribution of commuting and service traffic. Both types of infrastructure improve the access to - and accessibility of - locations and are therefore important location factors for firms. The weights of those factors for firms differ depending on the economic sector concerned, the economic activity, the location and the market.

As a consequence, real foot-loose or nomadic companies exist only rarely in a pure form. There will always be some kind of linkage to transport infrastructure. Relocation of activities is only desirable when the costs of a new location - in terms of infrastructure costs - are lower than at the old location. Next to this, the transition and sunk costs caused by the

relocation might be large. In reality, there will only be a small fraction of companies operating in a purely contestable market with zero entry and exit costs which might instigate a frequent relocation of company activities. The chance of finding nomadic companies that are both foot-loose and have negligible transition and sunk costs is thus small. This means that even in an international economy, pure nomadism will probably not become a phenomenon of considerable magnitude in terms of entire physical company relocations. However, a development that could be expected is a relocation in several phases. Firms open subsidiary companies which, over time, expand their activities and gain in economic importance. In the longer term this process will have the impact of a nomadic relocation, and can only be measured in an evolutionary sense. Research on relocations should therefore pay more attention to those incremental relocation processes. In other words, it is not the question whether pure nomadism exists that is important, but rather to which extent - given a number of relocations of certain activities - there is a process of nomadic tendencies.

Finally, transport infrastructure is only an important determinant in relocation decisions and in nomadism when it is seen in a synergetic relation with other location factors, such as quality of living, labour market, cost levels, etc. In some cases it seems that the quality of the transport infrastructure network is of decisive importance. However, the actual location decision is based on a broad set of locational factors which determine the entrepreneur's choice. In a saturated competitive market, 'soft' location factors such as local image and local policy might be particularly important. It might be attractive in such a market to translate infrastructure advantages of a given place into economic and psychological image factors of that location.

In the light of the previous findings, it is also important to understand that infrastructure contains more than roads and harbours. It concerns an integrated package of services offered by networks of several categories, which explains that a company at a certain location generates more benefits - or market opportunities - than a company at some other location would achieve. This implies that from the viewpoint of international operating companies the identification of weak links in the chain and bottlenecks in this integrated package of transport infrastructure services is of critical importance.

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