

Synergy between Schiphol and the Port of Rotterdam

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Abstract

Reports and policy papers about the economic impact of our 'mainports' sometimes indicate that the presence of both a major airport and a major seaport in a single country offers particular surplus value for the economy. The mutual proximity of the Port of Rotterdam as one of the world's largest seaports and Schiphol Airport as Europe's fourth largest airport should make the Netherlands, and the Randstad conurbation in particular, unique. It is assumed that this must entail certain economic benefits. The word 'synergy' is often used in this regard. A great deal of research has been conducted into the economic importance of the mainports individually, but little, if any, into the synergy between them. This paper aims to illustrate the concept of synergy in relation to mainports, based on economic theory and interviews with stakeholders of the mainports. It also aims to start a discussion about the magnitude of synergy effects.

Introduction

The mainports both have their own function in the economic process. Schiphol provides international accessibility by air and the port of Rotterdam provides international accessibility by sea. Both mainports are therefore important for the trade and distribution function of the Netherlands. The mainports differ from other Dutch sea- and airports because of the volume of the traffic flows, the number and frequency of network connections and their appeal as a place of business.

The Dutch Ministry of Transport, Public Works and Water Management considers the mainports as driving forces behind the economy. It also expects "great economic synergy" with economic activity in a wide area around the mainports. In addition, the presence of both mainports provides "economies of scale". A similar viewpoint has been articulated in the Nota Ruimte: an interdepartmental policy document on spatial planning (Netherlands Ministry of Housing, Spatial Planning and the Environment et al., 2006). Furthermore, the Holland International Distribution Council points out the advantage of mutual proximity of the mainports for the competitiveness of firms that need air and sea freight.

Based on economic theory and consultation with mainport stakeholders, we conducted a tentative study on the concept of synergy in relation to mainports (Kolkman & Visser, 2007). The aim was to see if such an effect could exist and, if so, to make it more specific and concrete. In this study synergy is defined as a situation in which one plus one is more than two. The total benefit of having two mainports should therefore be larger than the sum of the benefits of each one of them.

The study distinguishes between two important aspects when analysing synergy:

1. **Interrelationship:** Certain firms or clusters of firms have developed economic ties with both mainports. This interrelationship develops as involvement with both mainports offers an economic benefit.
2. **Economic benefit:** This consists of two components. Basically there is the benefit derived from the relationship with one mainport plus that derived from the relationship with the other. This is referred to as combination benefit. In addition, a benefit may develop in excess of the combination benefit, resulting from the mutual effects between the mainports. This is referred to as interaction benefit.

Looking at dictionary definitions, the concept of 'synergy' refers to interaction benefit. However, in this study it became clear that it is difficult in practice to distinguish combination advantage from interaction advantage. Consequently, it is uncertain whether the concept of synergy is always used in the same meaning. To structure the discussion, this paper deals with both combination benefit and interaction benefit.

Combination benefit

Each of the mainports contributes independently to the following benefits: economies of scale, economies of scope and economies of agglomeration. Economies of scale are obtained because of the size of the aircrafts or vessels that can be accommodated at the mainports, the size of the organisations involved in the operations and the high frequencies of the transport services (Kuipers et al., 2003). Economies of scope are obtained through the hub and spokes networks that have developed at the mainports. These networks combine freight or passengers with different origins and destinations. Furthermore passengers and freight can be combined in one aircraft [literatuur!]. Firms located in the Netherlands also benefit from the proximity of the mainports. In many cases this means lower transport costs in the carriage of cargo or passengers on land, compared to the situation of transportation through comparable foreign airports or seaports.

Economies of agglomeration are related to clusters of firms and employees and all manner of social and technical infrastructure within urban areas. The mainports contribute to economies of agglomeration through clustering of airport or seaport related firms (SEO et al., 2006; Kuipers et al., 2003; HBR, 2004). In the Rotterdam region this applies, for example, to petrochemicals, wholesaling and logistic activities like (European) distribution centres. In the Schiphol region this applies mainly to all forms of business services, (European) head offices, wholesaling and logistic activities.

Clusters have the advantage of the relatively large labour market specialising in their area, resulting in lower costs in finding suitable personnel (labor spillovers). In addition, the clusters have the advantage that specific knowledge is more easily exchanged free of charge within the agglomeration through social networks (knowledge spillovers). [literatuur!]

For firms maintaining relationships with both mainports, the economic advantage consists of the cumulative effect of the individual mainport advantages mentioned above. This is the combination advantage. For the Netherlands as a whole, this results in a better business environment. Both mainports attract somewhat similar, but also different types of international firms. The combination advantage is such that a wider range of international firms is inclined to establish operations here.

Interrelationship

The interrelationship of economic activities with both mainports has been examined by analysing the involvement of stakeholders in civil aviation and those in the sea freight market. We looked at shipping companies, airlines, port and airport authorities in Rotterdam and Schiphol, logistic service providers, shippers, and their suppliers. The conclusion is that the interrelationship with both mainports exists mainly among logistic service providers and shippers. Of the top 200 logistic service providers in the Netherlands, 69 offer services on both markets, including such well-known examples as DHL, TMI Road Air, UPS, CEVA, De Rijke Groep, etc. [literatuur!]

Shippers that maintain a relationship with both mainports are primarily found in such clusters as international wholesaling (e.g. garment industry), agriculture/food, oil/chemicals, machinery and electronics, and maritime (offshore industry and business services) [literatuur!]. Interrelationship exists not only because of the goods flows through the two mainports, but also through the combination of goods flows through the seaport and flows of business travellers through the airport. On the basis of available data it is very difficult to say anything sensible about the extent of interrelation of shippers with both mainports.

Shipping companies and airlines rarely maintain links with both mainports, they can be virtually regarded as separate markets. Both can have suppliers from the metal and

petrochemical industries. The operation and management of the mainports can be regarded as largely separate processes. However, cooperation and joint pursuit of interests are beginning to take off.

Interaction benefit

Is it possible that firms with an interrelationship with both mainports can have the advantage of extra benefits on top of the combination benefit? Various arguments point in that direction. Logistic service providers can have an interaction benefit through extra economies of scale in labour market and logistic knowledge. The more strategic functions in both segments (sea and air) have a lot in common. This creates a larger labour pool and consequently lower costs in finding suitable personnel. In addition, the proximity of the mainports increases the chance that people employed in logistics meet each other in (social) networks in which they exchange knowledge. Furthermore there are economies of scope in the organisation of logistic services. Certain fixed costs can be allocated to both freight segments. However this does not apply to the costs of the carriage of air cargo or sea freight on land. That is separated to such a degree that no extra economies of scale or scope can be obtained through offering both services.

Logistic service providers active in both the air cargo and sea freight chain also have an interaction advantage towards their customers. Shippers with both air cargo and sea freight flows increasingly prefer to have these flows managed by a single provider. Shippers opt for this because of the lower transaction costs.

Shippers can create their own interaction benefit by applying different supply strategies. Transportation across the sea is slow but relatively cheap. Transportation through the air is fast but relatively expensive. The availability of Schiphol and the port of Rotterdam enables firms located in the Netherlands to choose the mode of transportation that, from a competition perspective, fits best at a certain moment. This flexibility plays a role for example when new consumer electronics are launched. Producers want their new products to be on the international market as soon as possible, to stay ahead of competitors as much as they can. In order to do so, small quantities are sent to different markets by plane, while the rest of the supply is transported with (container)vessels. Comparable strategies can also be seen in the transport of large machinery. Big parts are transported with vessels and small parts are transported in airplanes, for example to a distribution centre where both kind of parts are combined. Or with spare parts as sea freight in the inbound route to a distribution centre (DC) and as air cargo in the outbound route from a DC to a customer.

Business climate

On an aggregated level an interaction benefit to the business climate in the Netherlands can be expected based on the option value theory. The concept of option value refers to the value that can be attributed in the present for the opportunity to use a certain (infrastructural) facility in the future, although one does not need to use that facility now (Geurs, 2006).

In relation to mainports and business climate, this means that only the airport or seaport is relevant for the current business of a firm. However, the availability of both types of ports provides opportunities for flexibility. This can be interesting when a firm expects to expand to other international markets in future (input and/or output), or when a firm wants to feel more certain about the options it has in a changing business environment. Option value does not refer to what extent options are actually being used, but only refers to the effect of having options on the attractiveness of a place of business, prior to the choice of this place.

During the interviews a lot of stakeholders indicated that they expect some synergy of the mainports to the image of the Netherlands as well. For example the image of a country specialised in logistics and distribution. This image could on itself be an important factor in the choice of the place of business, but probably there will only be combination benefit to such an image. No theory was found that supports the idea of interaction benefit in relation to image.

Magnitude of benefits

Because of the tentative character of our study we did not try to quantify the magnitude of the interaction benefits. For that matter, it will also be very difficult – maybe even impossible – to do so. However, what we do know is that on a micro-economic scale interaction benefits are only gained by a limited number of firms in a limited number of business sectors.

Consequently we estimate the interaction benefits to be rather small in comparison to the benefits of each mainport separately. If we define synergy according to a dictionary as the interaction benefit, the consequence is that the port of Rotterdam and Schiphol airport create synergy, but that the magnitude of it should not be overestimated.

From a macro-economic perspective we also want to note that the existence of interaction benefits at the micro-economic level should not be construed to mean that some 'interaction benefit' should be added to existing figures about the mainports macro-economic importance. Due to the fact that several logistic firms and shippers have a relation with both mainports, it is even very likely that their contribution to figures like added value and employment is being counted twice.

Conclusion

Based on economic theory and consultation with mainport stakeholders, we conducted a tentative study on the concept of synergy in relation to mainports. The study distinguishes between two important aspects when analysing synergy: interrelationship and economic benefits derived from that interrelationship. Basically there is the benefit derived from the relationship with one mainport plus that derived from the relationship with the other. This is referred to as combination benefit. In addition, a benefit may develop in excess of the combination benefit, resulting from the mutual effects between the mainports. This is referred to as interaction benefit. Looking at dictionary definitions, the concept of 'synergy' refers to interaction benefit.

Certain logistic service providers and certain international trade firms in the sectors agriculture, nutrition, machinery, (consumer)electronics, wholesale and (petro)chemistry profit from interaction benefits. Interaction benefits for logistic service providers consist of lower costs in the organisation of logistic services, lower costs in finding suitable personnel and lower costs in developing and using knowledge. Interaction benefits for international trade firms consist of lower transaction costs in purchasing logistic services and of benefits that can be created by themselves by applying different supply strategies. The availability of the mainports enables them to choose the mode of transportation that, from a competition perspective, fits best at a certain moment. On an aggregated level an interaction benefit to the business climate in the Netherlands can be expected based on the option value theory.

On a micro-economic scale interaction benefits are only gained by a limited number of firms in a limited number of business sectors. Consequently we estimate the interaction benefits to be rather small in comparison to the benefits of each mainport separately.