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Lessons learnt from the market for air freight ground handling at Amsterdam Airport Schiphol

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A B S T R A C T

On 16 April 2013, the European Parliament adopted a new, amended airport ground handling Regulation, which will replace the old Directive 96/67 EC on ground handling services. The new Regulation will further open up European airports for competition on the ground handling market. Even long before the introduction of Directive 96/67/EC, Amsterdam Airport has had a liberalised handling regime. Against the background of the further liberalisation of the European ground handling market, this paper investigates the characteristics of the open ground handling market for air cargo at Amsterdam Airport and the lessons that can be learnt from the Amsterdam experience. We find that an open handling market brings greater freedom of choice for airlines and lower handling fees. However, we do not see any (serious) market failure for the airport that would justify intervention by the market regulator, by limiting the number of handlers for example.

1. Introduction

1.1. Liberalisation of the ground handling market at airports

In 1997 the European Council adopted Directive 96/67 EC on ground handling at European airports. By means of this directive the Council attempted to open up the ground handling market at European airports, among other things by stipulating that at large airports there should be no fewer than two providers of ground handling services (Fuhr, 2009; Soames, 1997). This first step was intended to result in greater competition between the handlers of passengers, luggage and freight. More competition should lead to lower prices, better quality of service and more efficiently operating ground handling companies.

The Directive changed the structure of the market: there is now an open market for ground handling services at the airports concerned in many European member states (see Fig. 1). For example, the Netherlands, Ireland, the United Kingdom, Sweden, Finland, the Czech Republic, Bulgaria and Lithuania have a fully liberalised access regime for new providers of ground handling services. Evaluations of the Directive (SH&E, 2002; ARC, 2009) also conclude that liberalisation has resulted in a more competitive ground handling market. The number of third party handlers in the ten years since the introduction of the Directive has grown substantially; on average the number of third party handlers for apron handling per airport grew by 81% between 1996 and 2007. Prices fell by an average of 12% between 1996 and 2002. The effects on the quality of ground handling are unclear (ARC, 2009).

At the same time it must be conceded that the liberalisation of the ground handling market is only partially successful. In Belgium, Austria, Germany, Spain, Portugal and Greece, the maximum number of handlers at an airport is still subject to a limit. Access to the market is only possible through a tender procedure for a limited number of handling licenses issued for a maximum period of seven years. At several airports, such as Frankfurt, the airport operator itself is active in ground handling. In Italy and France the handling market has been liberalised at some airports, but access to others is limited. Finally, so-called self handling by large airlines at their home bases limits the contestable part of the market for third party handlers.

It is important to note that regulatory restrictions on the ground handling market at European airports concern baggage, freight & mail, fuel & oil and ramp handling (airside). The warehouse handling of freight and mail (landside) is fully liberalised at most European airports, or at least not restricted.

The variety of handling regimes led the Council to state that the '*EU groundhandling market is today a mosaic of different national*

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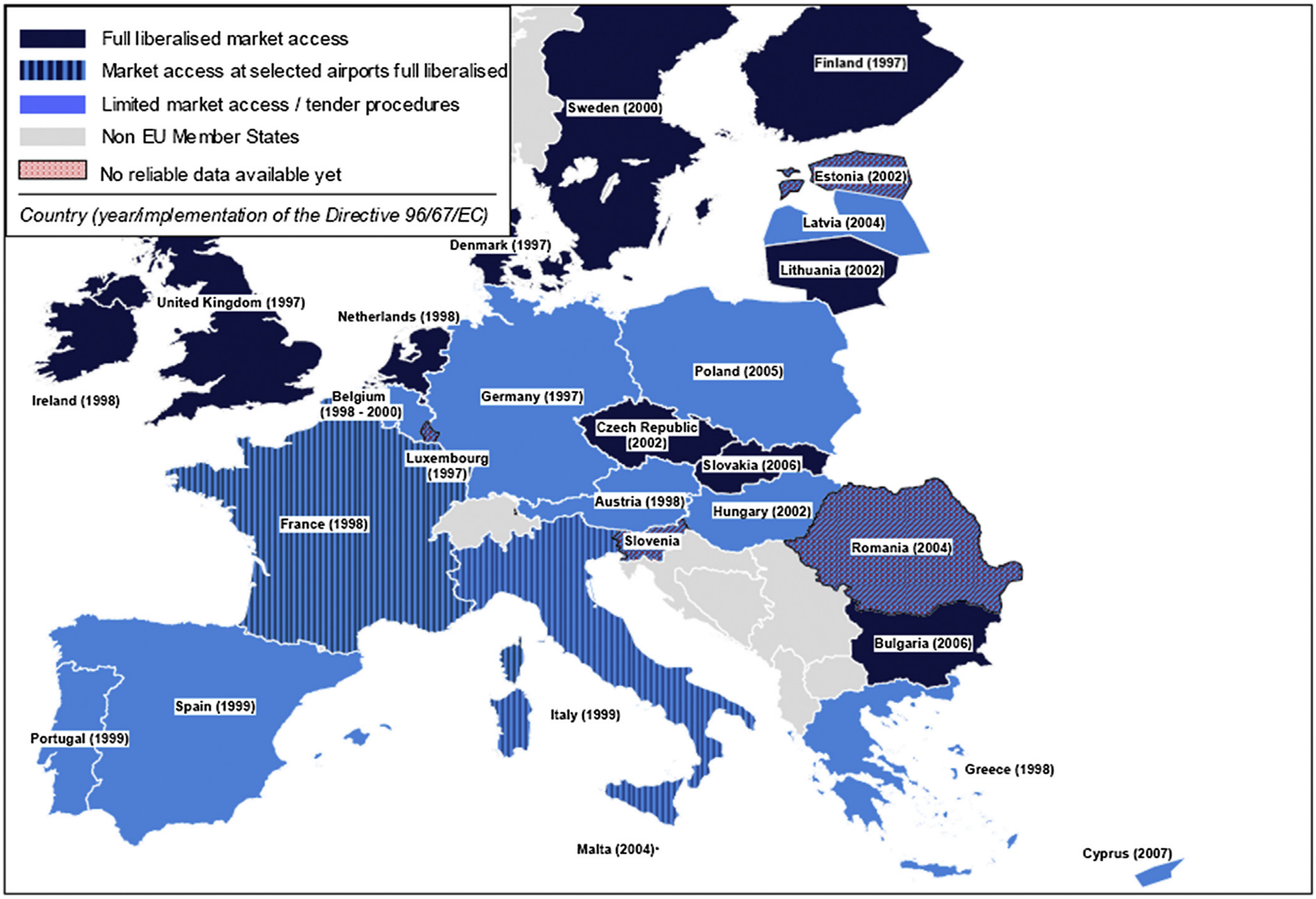

Fig. 1. The structure of the ground handling market varies greatly between EU member states.
Source: ARC (2009)

markets, with different numbers of minimum suppliers […], different conditions of access to that market'[1]. A consultation round of the Council among airlines, handlers, airports and member states showed that airlines emphasise the importance of greater freedom of choice and a more competitive market in order to lower costs in the value chain but that at many airports ground handling competition is still limited.

Independent handlers (third party handlers) argue for more fair competition, particularly when it comes to handlers who are allied to airports or airlines. Virtually all stakeholders support regulations to safeguard the quality of handling services.

1.2. Proposal for new regulation

Subsequent to the aforementioned consultation, in late 2011 the European Commission published a proposal for new regulations for the ground handling market,[2] as part of a broader *Better Airport Package*. The proposal observed that while the number of providers of ground handling services has increased and prices decreased, ground handling services are still not efficient enough due to barriers to access. Perhaps even more importantly, the Commission stated that the quality of ground handling was not keeping up with the needs of airlines and airports in relation to safety, the environment and reliability. Table 1 outlines the key elements of this proposal and the amended proposal as adopted 16 April 2013 that are relevant for this article.

The proposal for the a new regulation on ground handling was intended to open up the market for ground handling further, among other things by completely opening up the market for self handling by airlines and increasing the minimum number of providers at large airports from two to three. The proposal also meant that airports would have to draw up minimum quality standards for ground handling, in accordance with the directives of the Commission.

However, on 11 December 2012 the European Parliament voted against the proposal for a new Regulation. It was sent back to the Transport and Tourism Committee of the European Parliament for review. One of the most important arguments of the Parliament for rejecting the proposal was that it was not entirely clear that the Regulation would in fact lead to greater efficiency in the ground handling market. There were also concerns about the working conditions of employees of ground handling companies with further liberalisation of the market.

Hence, the Commission revised the proposal on a number of points, among which the guarantee that existing collective agreements with unions must be honoured in any new ground handling

[1] Public Consultation on a possible Revision of Council Directive 96/67/EC. http://ec.europa.eu/transport/air/consultations/doc/2010_02_12_groundhandling_consultation.pdf, p. 11.

[2] European Commission, Proposal for a Regulation of the European Parliament and Council on ground handling services at European Union airports and repeal of Council *Directive 96/67/EC*, COM (2011) 824 final, 1-12-2011.

Table 1
Key aspects of Directive 96/67/EC and of the amended proposal for a new EU Regulation on ground handling as adopted 16 April 2013.

	Directive 96/67/EC[a]	Amended proposal as adopted 16 April 2013[b]
Third party access	Member states can limit the number of *third party handlers* to no less than two at airports with more than 2 million passengers/year or 50,000 tons of freight.	- Member States may limit the number of ground handling suppliers at airports with more than 2 million passengers a year or 100,000 tons of freight to no less than two suppliers - Member States shall not limit this number to fewer than three suppliers at airports with more than 15 million passengers or 200,000 tons of freight a year
Self-handling	Member states may limit the right of *self handling* to no less than two airlines at airports with more than 1 million passengers or 25,000 tons freight per year.	All users of the airport have the right of self handling.
Tender period in restricted regimes	- Tender period in restricted handling regimes is a maximum 7 years.	- Tender period in restricted handling regimes is a minimum of 7 years and a maximum 10 years. - Harmonisation of selection procedure for third party handlers in restricted handling regimes.
Quality	No minimum quality standards	- Obligation of airport to draw up minimum quality standards for ground handling at airports with more than 5 million passengers or 100,000 tons freight per year after consultation of the Airport Users' Committee. - Minimum quality standards have to comply with set of specifications laid down in an Annex to the Regulation - Competent authority shall impose penalties where quality standards are not met
Training	- No compulsory minimal training	Compulsory minimal training of ground handling personnel, but more specified than in original proposal
Social protection and working conditions		- Member States shall require for ground handlers to hire staff previously employed with handler that lost its license - transfer of collective agreements to new ground handler - Member States ensure that 'wage dumping' on ground handling employees is prevented - Member States shall ensure that there is adequate social protection for the staff

[a] Council Directive 96/67/EC of October 1996 on access to the ground handling market at Community Airports.
[b] Report on the proposal for a regulation of the European Parliament and of the Council on groundhandling services at Union airports and repealing Council Directive 96/67/EC. A7-0364/2012.
Source: authors' own elaboration based on European Commission (2011) and Council Directive 96/67/EC.

agreement. In addition, some extensive liberalisation measures would only apply to airports with more than 15 million passengers per year, instead of the original threshold of five million. On 16 April 2013, the Parliament adopted in a first reading a new, amended ground handling Regulation.

1.3. Schiphol: lessons learnt

To get some idea of the possible effects of further liberalisation of the European ground handling market on airports, which currently have a restricted regime, it is worthwhile examining the ground handling market at Amsterdam Airport Schiphol. The reason for this is that in many respects, the regime at Schiphol is more in line with the new regulation that will apply to other large airports after its implementation. Even long before the introduction of Directive 96/67/EC, Schiphol has had a completely open, liberalised handling regime. As a result, the handling market of Schiphol has been one of the most competitive in Europe for a long time, which makes it a suitable case for investigating the characteristics of an open handling market.

What lessons can be learnt from the experience at Schiphol? What is the structure of the ground handling market at Schiphol and what dynamic is at work there? And to what extent do market failures make intervention by a market regulator (airport operator, government) necessary or desirable? To what extent can the quality of ground handling be maintained in an open handling regime?

In the rest of this article we will answer the above questions in as much as they relate to the ground handling market for air freight. First, we introduce the ground handling market for air freight. Next, we describe the market structure and dynamics at the air freight ground handling market at Amsterdam Schiphol. Finally, we address the question if there are indications of market failure in the open handling market of Schiphol and if intervention by a market regulator could be justified.

The research is based on a series of (confidential) reports on the economic aspects of the air freight ground handling market at Schiphol, which allowed the authors to gain detailed insight into the working of the ground handling market for air freight at Schiphol (Burghouwt et al., 2011; Burghouwt and Cook, 2011; Burghouwt and Poort, 2012). Apart from data analysis and desk research, interviews have been carried out with 7 major cargo airlines, 7 cargo handlers and 4 freight forwarding companies during the second half of 2011 and the first half of 2012. A round table discussion took place at Schiphol Airport in April 2012 to validate and check study results with major cargo industry stakeholders.

2. The ground handling market for air freight

2.1. Air freight handling as part of the logistical chain

Air freight handling activities are part of the air freight logistical chain. This chain consists of a number of activities for which a variety of parties is responsible. The forwarder is a central player in the chain: on the instruction of the shipper/consignee he sees to the door-to-door transportation of the goods from sender to receiver. The forwarding agent books the shipment with the airline, possibly consolidated with other shipments, as laid down contractually in the air waybill. The airline instructs the handler to handle its flights through the flight manifest. Here the airline uses handler(s) with whom an IATA Standard Ground Handling Agreement (SGHA) has been entered into. The airline pays the handler a fee as laid down in the SGHA. Generally the airline also concludes a Service Level Agreement (SLA) with the handler on the quality level of the

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handling services. On the export side, handlers at Schiphol receive 100% of their revenues from the airline. On the import side, the airline fee constitutes about 80% of the handlers's revenue. The remaining 20% comes from the forwarding agent. On the import side the handler has additional costs (extra paperwork, placing freight in front of the warehouse door ready for the forwarding agent). The handler charges these activities directly to the forwarding agent.

2.2. Players and activities in ground handling

The handling of air freight on the airside consists of three different activities:

- *Warehouse handling*: collecting of freight for export flows, distribution of freight among the forwarding agents for import flows, building up and breaking down of pallets in the handling warehouse.
- *Ramp transport*: transportation of freight from the warehouse to the aircraft and vice versa
- *Ramp handling*: loading and unloading the aircraft

In principle the airline can deploy several handlers for each step. In practice it will usually deploy just one. Distinguishing between the different activities is important, mainly as spare warehouse capacity and space available for warehouse handling within the airport perimeter influence the level to which airlines can switch between different handlers. It is on the market of ramp transport and ramp handling where regulatory restrictions exist at other European airports. The market for warehouse handling is characterised by a much more liberalised regime.

There are four kinds of players operating on the European market for air freight handling. First there are the self handling airlines. In principle the airlines are the handlers' customers, but many (network) carriers handle their own freight at their home base. Self handling is attractive because at its home base, a hub airline needs reliable handling which it can control, with short connecting times. The large market share of the hub carrier at a hub airport means that a large part of the freight market is not contestable for other providers of ground handling services.

Secondly there are some airport operators, such as Fraport, who offer their own handling services. Thirdly there are the independent handlers, such as Swissport, Aviapartner, WFS and Menzies. Many of these third party handlers are global players. They are increasingly concluding multi-station contracts with airlines whereby the airline contracts a handler for a number of different airports in her network. Finally, a number of airports have recently seen forwarding agents becoming active in the market for warehouse handling on the so-called first line (the freight warehouses adjacent to the apron).

2.3. Buyer power

Characteristic of the cargo ground handling market is that airlines have sufficient buyer power at their disposal as long as there is enough residual capacity among the handlers for airlines to be able to play them off against one another. Since handling capacity is static on the short term with high fixed costs and low marginal costs, while demand is more volatile and can be adjusted more easily, price competition in the handling market is intense. This is aggravated by the fact that the services provided are relatively homogeneous; there are few opportunities for product differentiation (Beyer, 2010). Furthermore there is a minimum scale at which handlers have to operate in order to make a profit and they have high overheads (warehouse rent). The threat of losing market share puts pressure on prices and therefore gives airlines buyer power over the handlers.

Meersman et al. (2011) see the position of the airline in negotiations getting even stronger, particularly as a result of consolidation in the airline market. This buyer power created by consolidation is manifest in such things as multi-station contracts and the volume discounts associated with them. In addition, Templin (2005) points out that there is an increasing willingness on the part of airlines to switch handlers. This is remarkable in light of the switching costs involved (Beyer, 2010).

3. The Schiphol market: introduction

Schiphol has an open handling regime, to which handlers have free access provided warehouse space is available and the handler has a contract with an airline. Rather than performing handling activities itself, the airport operator Schiphol Group facilitates the handling of freight at the airport, both landside and airside. The airport develops warehouse space on the first and second line[3] and leases it to third parties. Quality is important for the airport operator. At present, however, it is not possible for the airport to guarantee a minimum level of handling quality. There are no agreements on this between the airport and handlers, since handlers already have contracts with the airlines and there is no concession regime at Schiphol.

In the current market in which costs are under pressure, an open question is if quality of ground handling is also under pressure in an open ground handling market. Focussing on cost-cutting can also lead to stagnation of development and innovation. In addition, the amount of space in the first line – the warehouse space adjacent to the apron – is limited. If the airport is to facilitate future growth in passenger numbers and freight it is important for warehouse handling to become more efficient. There is also a growing demand on the part of forwarding agents to have their warehouse situated on the first line adjacent to the apron. The more parties there are on the first line, the more inefficiencies there are due to fragmentation of warehouse and apron capacity. Ultimately this does not promote efficient use of the available airport space. This is an awkward dilemma in the open handling market, which becomes more prominent when a shortage of handling space threatens.

4. Structure and dynamic in the market for air freight handling at Schiphol

The open handling regime at Schiphol has led to a large number of handlers at the airport and a lot of choice for airlines. In 2012 eight parties were active on the handling market for air cargo. KLM and DHL are carriers who handle most of their freight themselves. Aviapartner, Menzies, Swissport, WFS, Servisair and SkyLink were active on the market as third party handlers. Finally, alongside these eight players there are forwarders such as Panalpina and Rhenus, doing their own first line warehouse handling. The prevailing opinion from the interviews carried out among ground handling stakeholders at Schiphol Airport is that the ground handling market at Schiphol is highly fragmented and there is a kind of hyper-competition between the handlers, with very low or even negative profit margins. If we look more closely at the structure and dynamic of the market however, we find two things that contradict this opinion.

[3] First line: the warehouse space adjacent to the apron/airside. Warehouse space on the second line does not link directly to the apron.

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4.1. Strongly concentrated market

Despite the large number of players the market is surprisingly concentrated: in 2012 92–93% of both warehouse handling platform handling was in the hands of the three largest players. Throughout the years 2005–2012 the market concentration according to the Hirschman–Herfindahl Index (HHI)[4] remained above 2500 during almost the entire period of analysis (Fig. 2). Excluding self handler KLM (as its share of the handling market is not contestable), this picture remains strikingly similar. In competition terms, markets with an HHI above 2500 are considered to be strongly concentrated. In such markets there is a risk of competition problems in the form of abuse of market power or collusion. The 'number of effective competitors' is a metric akin to the HHI.[5] For warehouse handling, this number is 3.5 in 2012 (or 2.6 excluding self handling) and 2.8 on the market for ramp transport/handling: a concentrated market.

The market concentration for warehouse handling declined slightly between 2005 and 2012 but since then rose back to the 2005 level. Platform handling has become more concentrated after KLM took over Martinair in 2008. Poor economic conditions in recent years are reflected in a slight increase of market concentration (HHI) over the past years. The market exit of Airpcargo some years ago, the take-over of Martinair by KLM and the exit of a major cargo airline in 2011 have affected the market concentration levels.

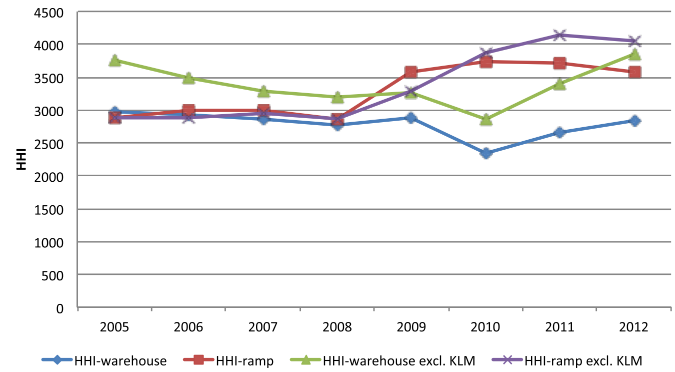

Fig. 2. Market for air freight ground handling is strongly concentrated.
Source: Data Schiphol Group 2005–2012; calculation by authors

4.2. Switching behaviour

Another striking point is that until 2011, the dynamics on the market in terms of the number of switches to another handler was limited. In spite of the fact that airlines at Schiphol have a wide choice of handlers, they preferred not to switch. Contracts are generally short-term (2–3 years), but few airlines switched on expiry of their contracts. Out of the full-freighter airlines an average 2% of airlines switched handler each year. There was no substantial increase in the number of switches until the last months of 2011. What is the cause of this low switching rate up until 2011?

In the first place, switching handler involves costs and risk for the airline. Some of these costs are sunk. This is the case for the costs of the move itself, specific investment in the warehouse of the handler, but also the costs of building up a new relationship with the new handler, including the loss of 'credits' built up over time with the previous one. In addition, it takes some time for the new handler to fulfil all the requirements and expectations of the airline. These costs are incurred every time a switch is made. Each switch involves risks to the quality of the operation of the airline in relation to safety and on-time performance. Certainly in the case of switching a large airline operation between handlers, there is a risk that the quality of the new handling operation will not be up to scratch on day one.

In the second place, personal contacts play a big part in the low switching rate. Many station managers of airlines have been at Schiphol for a long time. The bond with the handler and the sense of loyalty toward him is considerable. This limits the urge of airlines to switch.

In the third place multi-station contracts mean that specific local conditions with respect to price and quality do not lead as quickly to a switch to another handler. They create a higher exit threshold for the airline. Switching handlers at one station has financial consequences for the airline because multi-station contracts incorporate incentive schemes (the more stations/volume, the bigger the discount for the airline).

Finally, the available warehouse capacity at other handlers plays a role. For the many small airlines who transport air freight in full freight operations or in the belly of the aircraft, capacity is no obstacle when it comes to switching handler: there is always enough spare capacity at another handler. Only for the very largest freight carriers at Schiphol is the warehouse capacity at other handlers not sufficient for them to switch, at least not in the short term.

As outlined above, there are several types of switching costs, but capacity problems play no role for most airlines. Of course, airlines can threaten to switch to negotiate a better deal, but only up to a point is this threat credible in the light of the switching costs involved. The few switches that took place up to 2011 arose in the first place from mergers and takeovers of handlers, or following the exit and entry of handlers. Alliances, mergers and takeovers in the airline market itself also led to switches. Switches relating to price and quality were less frequent until recently. In most of these cases the reason for leaving was an inadequate level of quality on the side of the handler. The choice of new handler was usually based on price. Given the uniform ground handling product, the airline was often able, using its buyer power, to impose detailed quality standards on the handler using a service level agreement.

Our data allow us to analyse switching behaviour until early 2011 and this reveals relatively low switching rates up until that time. However, interviews with stakeholders and information from the Schiphol Group provide anecdotal evidence that the number of switches, and in particular the associated freight volume, may have increased slightly between 2011 and 2012, when a number of large cargo airlines switched handlers such as AirBridge Cargo, Kalitta and CargoLux. Apparently, airlines are increasingly switching when their contract expires. After several dire economic years, cost savings are crucial in the airline industry and airlines put up with the costs and risks of switching. Handlers see themselves forced to combat the declining utilisation rates of their handling warehouses by lowering prices to bring in new customers.

4.3. The paradox of the ground handling market at Schiphol

A concentrated market structure combined with a low dynamic (as was the case at least until late 2011) should in theory lead to good margins for handlers. After all, the handlers should eventually be able to capitalise on the observation that airlines do not often switch on the expiry of a contract by charging higher fees.[6]

[4] The HHI is a measure of market concentration defined as the sum of the squares of the market shares. In case of a full monopoly, the HHI equals 10,000. The more competitive a market is, the lower the HHI.

[5] Defined as 10,000/HHI, it gives the number of equally sized competitors that would yield the same HHI.

[6] For an overview of the literature on competition in markets with switching costs, see Farrell and Klemperer (2007).

Moreover, there are barriers to entry and exit for handlers in terms of acquiring warehouse space, recruiting and training personnel and building relations with airlines. However, the margins for handlers at Schiphol were and still are very small. The handling prices are among the lowest in Europe. How is this paradox to be explained?

One initial explanation for the low margins is the competition for new contracts. As is often the case in markets with substantial switching costs, the competition for new airlines entering Schiphol is intense. This is generally referred to as 'competition for the market'. Since there are substantial switching costs for existing contracts, handlers do everything they can to bring in new customers. As a result new contracts start 'low' in the market, with a very competitive price and small margin. The same applies to competition for airlines who have to contract a new handling agent when the current handler leaves the market.

At least until 2011, an airline with an established handler was not very likely to switch. On the renewal of the contract the handler should therefore have some room to capitalise on the switching costs of the airline in the new contract. Taking into account the volume of the airline and the overcapacity in the market, he should be able to make an estimate of how real the threat of the airline switching handler is, as well as of the costs involved for the airline. Considering that the number of airlines switching handlers is increasing due to the bad economic situation, the scope for handlers in this regard seems to be limited. For the airlines the cost of not switching increasingly outweighs the cost and risks of switching. Handlers are seeing their volumes fall and try to compensate for this by bringing in new customers.

There is, however, another reason why taking advantage on switching costs only appears to work to a limited extent in the current market situation. Airlines can deploy their assets (and personnel) more flexibly and in alternative directions to maintain profitable. If things are going badly in the EU-US-market for example, they can shift operations to the Asian market. So in bad times the airline can adjust their entire operation, whereas all the handler can do is cancel the temporary employment agency workers. The handling market is therefore more sensitive to the economic cycle than the airlines. The expected upside would be that in good times the handling market should profit from this, unless a lot of entry is possible in the short term.

5. Market failure

Against the background of further liberalisation of the European ground handling market, an important question arises as to whether market failures exist in completely free handling regimes. Market failures could be a reason for the market regulator (airport operator or government) to intervene in the handling market, by limiting the number of third party handlers for example. Economic theory identifies a number of specific market imperfections, which could lead to market forces failing to deliver optimal social welfare. Are there indications, looking at the structure and dynamic of the freight handling market at Schiphol, of such market failures? The relevant potential imperfections for the ground handling market are market power, external effects and information asymmetry. To conclude this paper, some other concerns are discussed that are sometimes expressed with respect to an open handling market.

5.1. Market power

5.1.1. No indications of collusion

In competition terms the ground handling market is a strongly concentrated one. With such market concentration the competition between players may be weak and there is a risk of collusion. There are, however, no indications of collusion at Schiphol. The limited number of handlers could encourage collusion, but the market shares of players fluctuate, there are takeovers and there is entry and exit. There is also substantial buyer power for airlines, both for new airlines at Schiphol and during the renewing of contracts.

Information from the Schiphol Group, airlines and handlers point rather to the opposite of collusion; in fact the market gives the impression of suffering from a form of hyper-competition (Bertrand competition). This kind of competition can occur in a market where the parties have fixed costs (economies of scale) and low marginal costs and can quickly adjust their volume, because of overcapacity for example. They may be tempted to compete against marginal costs. This leads to providers being unable to recover their fixed costs, since prices are close to marginal costs. When prices are higher it is, after all, tempting for a player to undercut the competition, thereby winning market share and recovering more fixed costs. In the handling market as a whole, however, the preconditions for hypercompetition are not fulfilled; there are costs and risks associated with switching. Furthermore capacity is fixed in the short term and some of the personnel costs are variable.

It is however possible that a Bertrand-like form of competition applies to certain parts of the market:

1. To the market for new contracts; this is the market in which handlers try to bind airlines at Schiphol by contract. In many markets with switching costs, providers compete hard to bring in new customers using competitive prices, discounts and 'incentives'.
2. To the market for existing contracts when a handler departs. This leads to a series of forced switches, whereby remaining handlers will try to bind airlines contractually. In fact the same situation arises as in market situation 1.

Summing up, on the one hand the preconditions for Bertrand competition are not fulfilled by the market as a whole and on the other hand, there are no indications of collusion. Nevertheless, parts of the market may meet the criteria for Betrand competition. Although the market structure and level of concentration observed in the Schiphol handling market would normally be a cause of concern in relation to market power and collusion, the opposite appears to be the case. Handlers compete so vigorously, especially for airlines entering the market and airlines that become 'footloose' after the exit of a handler, that the margins are low. Handlers also seem powerless to capitalise on the switching costs airlines would incur by switching handlers at the end of their contract. Furthermore the number of switches at Schiphol has increased in the more recent past as a result of the economic crisis.

Yet this does not appear to be the result of a market failure that would necessitate or even justify intervention by the market regulator. One factor here is the greater sensitivity of handlers to economic cycles because, in contrast to the airlines, they are unable to move their assets around the world. In order to mitigate this sensitivity to economic cycles to some extent, Schiphol has in the past taken back some of the temporarily rented warehouse space of handlers, in order to reduce the costs of handlers in a downward economic cycle and reduce overcapacity in the market.

5.1.2. Dominance over freight forwarding companies?

Earlier in this article it was pointed out that for the import of goods, the flow of money is not just from airline to handler; on the import side the handler charges a fee to the forwarding agent, the manager of the cargo flow. Since the forwarding agent has a contract with the airline and the airline chooses its own handler, the forwarding agent on the import side is forced to do business with (and pay) the handler chosen by the airline. There is no direct competition between handlers for the forwarding agent. This could give the handler market power with respect to the forwarding agent. Does this mean there is market failure?

In practice it appears that indeed forwarding agents are forced to do business with these handlers. However, the forwarding agents do not have their backs against the wall when it comes to determining prices and the quality of handling provided. Forwarding agents can exert influence indirectly through the airline if prices are too high or quality below standard. On the one hand by ceasing to use the airline if he continues to choose this handler. On the other by having freight trucked through another European airport. Finally it is also possible for the forwarding agent to do some of the handling on the first line or build up/break down more freight pallets himself.

The extent to which an individual forwarding agent can exert influence on the handler depends on the visibility of that forwarding agent at the airline; the individual forwarding agent is only one of many the airline can do business with. For smaller forwarding agents especially, the possibilities of indirectly exerting pressure are limited. Yet it would be going too far to conclude the market is failing to such an extent in this regard that intervention by the market regulator is appropriate. The forwarding agent can after all take into account the fees charged by the handler on the import side in his arrangements with airlines and exert pressure on the handler through the airline.

5.2. External effects: fragmentation of the market by multi-station contracts?

If the airport does not charge handlers for the full costs and opportunity cost of the used space plus any negative external effects on the surrounding area, this can lead to inefficient entry. There are no indications, however, that the warehouse fees of Schiphol are too low and therefore fail to reflect the opportunity costs, which would encourage inefficient entry.

What does play a role, however, is the issue of whether the handling market at Schiphol is fragmented to such an extent, because of the open handling regime, that handlers operate below their minimum efficient scale and thereby lose economies of scale.[7] This would not be an external effect inflicted on third parties in the classical sense above (like pollution and noise) but is more a negative network effect, similar to the congestion effect that road users inflict on each other. When handlers have no choice but to operate below the minimum efficient scale, the average costs are higher than what they would be when operating on a larger scale.[8] At some airports this may be a direct consequence of the limited size of the airport itself and little can be done about this.

If handlers at larger airports operate below their minimum efficient scale because of fragmentation of the market, this will in principle result in unnecessary inefficiency. It may lead to more parties having an inefficiently low utilisation rate of warehouse space, personnel or materials. The average costs per ton will then be unnecessarily high for everyone. In normally functioning markets, mergers and takeovers ensure that producers achieve the minimum efficient scale. An (inefficient) situation in which all providers operate below the minimum efficient scale is not stable. This might not be true, however, if providers are unable or unwilling to merge, or are taken over, for reasons other than efficiency in the (local) market.

As already mentioned, many handlers are part of a European or global company and the growing importance of multi-station contracts in the handling market may therefore lead to handlers remaining active at Schiphol for strategic reasons, even if the profitability of the operation is low or negative. In that case mergers and takeovers at the local level do not take place. In other words the competitors keep one another small. Handlers without a network may be the victims of this. However, the expectation is that it will still be possible for them to be taken over or go bankrupt if their position becomes untenable, without adverse consequences for the market as a whole.

5.3. Information asymmetry versus quality of service

One frequently expressed concern about further liberalisation of the handling market is that an open regime comes at the expense of the quality of the handling and innovation. For existing contracts, however, handlers cutting back on quality would risk penalty clauses coming into effect or customers switching handlers, which is a real danger especially in times of overcapacity. For new contracts, a decisive factor in this regard is the degree of quality transparency, particularly of the differences in the quality of handlers. When the quality of handlers is difficult for airlines to observe in advance, it is likely that their choices will be based primarily or entirely on the price. It pays for a handler not to invest in quality. To put it in economic terms, information asymmetry in relation to quality could lead to a collapse of quality.[9]

It is unlikely however that performance is difficult to observe for existing customers of handlers. This may be true of airlines before they enter the Schiphol market. But airlines usually enter into a Service Level Agreement with the handler including penalty clauses and bonus-malus arrangements. The airlines are after all strong parties who want to enter into a long-term relationship with the handler. Hence, contracting mitigates the adverse effects information asymmetry could have. Quantified information for new airlines at Schiphol about various handlers at the airport (benchmark) is not available, however. The new EU Regulation provides for this lacuna; the proposal obliges airports to set minimum quality standards and take measures when those standards are not met. This implies some kind of performance reporting obligation to the airport. The measuring and comparing of quality aspects could help to further increase the transparency of the market for new airlines.

5.4. Other concerns with a free market in ground handling

Another point relates to the relationship between market structure and innovation. Theoretical and empirical economic research shows that the relationship between the degree of competition in a market and innovation is not a linear one. Monopolies and markets with very intensive competition are generally less innovative. In the former case this is because the incentives for innovation are lacking, in the latter case because the room for

[7] By minimum efficient scale we mean the smallest scale at which the average costs no longer (substantially) decline with further growth.

[8] Note that Meersman et al. (2011) conclude that the economies of scale in the ground handling market are limited. These conclusions are based on an analysis of cost ratios for the two handlers at Brussels. The labour costs over the years appear to be high in comparison to the capital costs and the total operational costs, which implies that the operation is not strongly capital intensive. It is possible, however, that both handlers are operating at or above their minimum efficient scale, so that existing economies of scale are already being utilised. There may also be economies of scale in the deployment of personnel. Finally, the study of Meersman et al. relates to just two handlers who handle both passengers and freight, so that the relevance to pure freight handling is limited.

[9] Poor quality may even damage the reputation of the entire airport so that airlines could end up avoiding that airport. In that case below-standard quality has an external effect on others and intervention to guarantee minimum quality or increase quality transparency may be desirable.

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investment is lacking (Aghion et al., 2002). This implies that a highly competitive freight handling market may be at the expense of innovation if the benefits of innovation do not lead, or do not lead in the short term, to a reduction in costs for the handler.

Finally, a lack of innovation need not be related to the market structure but may also be due to the parties who have to contribute to the innovation and how these parties are organised. The parties involved in innovation may arrive at a stalemate for example, also known as co-ordination failure; they may be trying to manoeuvre into a favourable position individually and find it difficult to make collective choices. It is precisely such collective choices that are needed to arrive at innovation. Often the players who need one another are also one another's competitors, or the players are spread over different geographical markets with different institutional settings. In other words, to take a step forward several parties in the chain have to take action, whereas it is not worth it for any of them to be the first. In that case system failure may be involved. A "manager" is subsequently needed to solve this system failure and encourage the parties to take the necessary steps. Such system failure is being tackled by the Schiphol Group, Air Cargo Netherlands and Cargonaut in the E-link initiative for example when it comes to information and communication in the logistical chain.

6. Conclusions

What lessons can Europe learn from the experience of the open market at Schiphol when it comes to the further liberalisation of the European ground handling market in the new Regulation and the extent to which market failure could justify intervention by the market regulator?

As far as the handling market for air freight is concerned, the Schiphol case shows that an open handling market brings greater freedom of choice for airlines and lower handling fees. The low fees improve the competitive position of airports as a marketplace for freight handling. As such the changes made in the amended proposal as adopted 16 April 2013, which reduced the level of liberalisation considerably compared to the original proposal, are a missed opportunity to make the European freight transport industry more competitive.

In such an open regime the market is concentrated around a few large players. The profit margins for handlers are relatively small. However we do not see any (serious) market failure for Schiphol that would justify intervention by the market regulator, by limiting the number of handlers for example. Many quality issues are furthermore not so much related to the market structure and the handling regime, but have far more to do with the organisation of the logistical chain in a broader sense. There are no indications that the conclusions regarding market failure cannot be generalised to other large European airports. This means that in general there is no good reason for giving member states the opportunity to limit the number of providers of freight handling services at large airports. Hence, the burden of proof that restricting the number of ground handlers or some other market regulation is required, should rest with airports or governments that want to do so.

The situation in the open market regime at Schiphol can be described as a competitive oligopoly; the market is concentrated around several large players and flanked by smaller parties. The market does not work perfectly, but there is no question of serious market failure. We do observe however that hard data on the quality of the services of various handlers at airports is generally not available. Not for the operator and not for the airlines. Procurement departments of airlines have a tendency when selecting a new handler to concentrate on information, which is quantifiable and easy to compare, namely price. Greater transparency in the quality aspects of various handlers will make the role of quality more important in the selection procedure and give handlers more options when it comes to differentiating their services. In this respect, the new EU Regulation provide an opportunity to increase transparency in quality aspects and thereby to improve quality.

The handling market for air freight is highly sensitive to economic cycles, even more so than the air-related activities. In contrast to the airlines, handlers are not able to move their assets to other markets. To mitigate this sensitivity to economic cycles to some extent, airport operators may take back the temporarily rented warehouse space of handlers. Another option for the airport authority is to vary the rent of warehouse space with the handled tonnage. This means that the operator takes over part of the risk of the handler. For the airport authority, this additional risk will have to be accompanied by a higher expected rate of return; in good times, he will have to be more than compensated for the fact that he shares in the bad times. For the handlers this means that the break-even-point will require a higher level of utilisation of the warehouses.

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