

There is no such thing as a free lounge

– a report on frequent flyer programmes

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Preface

The Swedish Government has instructed the Swedish Competition Authority to review the effect on competition and on consumers of imposing restrictions on the use of bonus programmes (frequent flyer programmes, FFPs) in the Swedish domestic aviation market, and to present proposals for action. The mandate specifically calls on the Competition Authority to survey and analyse the range and application of frequent flyer programmes, to examine their impact on airlines and travellers, to describe legislation relating to their use, to analyse the consequences of introducing unilateral restrictions on such programmes in the domestic aviation market and to discuss ways in which Sweden might actively pursue, at international level, the question of limiting the use of FFPs in the air transport sector. The mandate is the subject of this report.

Stockholm, March 2003

Claes Norgren

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1 Introduction

There are many reasons why competition in the Swedish domestic aviation market may be considered flawed. Among the principal reasons are the fact that the market is capital-intensive and sensitive to economic fluctuations, that it embodies concentrated ownership structures, that it is subject to complex regulations and national and international agreements, and that there is congestion both in airspace and at airports.

Besides the problems that are attributable to the presence of complicated regulations, the system for distributing departure and arrival times, 'slots', at strategically important airports also represents an obstacle to competition. In addition, the market activities of airline companies - particularly companies in a dominant position – may have an adverse effect on competition.

The application of frequent flyer programmes (FFPs), also referred to as bonus programmes, is one such activity. FFPs can distort market incentives, especially if the person using a service is not the one who pays for it. An employee undertaking a business trip, for instance, may choose a more expensive travel alternative although such a choice is not justified by the difference in quality.

FFPs also generate switching costs, i.e. the cost to a traveller of switching from one air carrier to another, by giving travellers a stronger incentive to use the same carrier again. This means it costs the traveller more to switch airlines, which reduces the chances of competitors being able to attract customers away from a carrier. Switching costs can lead to substantial welfare losses in the form of lower production and consumption levels and higher prices. Such costs may also impede market entry and thus limit competition.

On 27 February 2001, the Swedish Market Court (*Marknadsdomstolen*) delivered a decision, based on the Swedish Competition Act (*Konkurrenslagen, 1993:20*), on SAS's use of its EuroBonus programme.¹ In all essentials, the decision represented

¹ Market Court, MD 2001:4

confirmation of the injunction imposed on the scheme earlier by the Competition Authority.

Under the Market Court decision, SAS is forbidden to apply its FFP in such a way that points or the equivalent for the redemption of bonus offers can be earned on domestic flights between destinations where SAS, or airlines cooperating in an alliance with SAS under the programme, are in competition. SAS, however, is still free to award points on other domestic routes. Other airlines are free to award points on all domestic flights, regardless of whether they are in competition or not.

The Market Court decision and the Competition Authority injunction are based on Section 19 of the Competition Act prohibiting abuse by any undertaking of a dominant market position.

1.1 The mission

The Government decided on 13 June 2002² to instruct the Swedish Competition Authority to review the effect on competition and on consumers of imposing restrictions on the use of bonus programmes (FFPs) in the Swedish domestic aviation market, and to present proposals for action. Under the mandate, the Competition Authority is specifically called upon to

- survey the range and application of FFPs in the Swedish domestic aviation market and to analyse their impact on airlines and travellers,
- detail legislation, etc, relevant to the presence and application of airline programmes for frequent flyers,
- review the existence and application of FFPs at international level, especially in the EU member states, and describe the outcome of any studies undertaken in this field,

² N2002/5777/TP (2002-06-13).

- analyse the implications of introducing unilateral restrictions on FFPs in domestic aviation and to discuss ways in which Sweden might actively pursue, at international level, and particularly in respect of the EU and its domestic markets, the question of limiting the use of FFPs in the aviation sector.

In accordance with the terms of the mandate, the investigative work was undertaken in consultation with the Swedish Civil Aviation Administration (*Luftfartsverket*) and the Swedish Consumer Agency (*Konsumentverket*).

The Competition Authority conducted its study in the form of a project. The project group comprised investigators and advisers from the various agency departments, led by Erik Murray. The other group members were Ola Bergström, Mikael Ingemarsson and Jens Lehman.

1.2 Implementation and disposition

As a first step, the Competition Authority contacted airlines³ and stakeholder organisations to determine their views on frequent flyer programmes and to develop a general idea of the problems and measures that the stakeholders themselves feel should be addressed.

A questionnaire⁴ was sent to airlines and stakeholder organisations,⁵ and the replies were collated by the Competition Authority. In some cases, the written replies were followed up by means of meetings.⁶

As the report largely concerns the application of FFPs in the Swedish civil aviation market, we chose primarily to contact

³ The terms airline, airline company and carrier are used synonymously in the report.

⁴ See Annexes 1 and 2.

⁵ SAS, Skyways, Malmö Aviation, Nordic AirlinK, Golden Air, Gotlandsflyg, City Airline, Värmlandsflyg, Walt Air, Ryanair, Goodjet, Finnair, Lufthansa, Svenskt Flyg, the Swedish Business Travel Association, the Association of Swedish Travel Agents and the Swedish Aviation Association.

⁶ SAS, Gotlandsflyg, the Swedish Business Travel Association and Svenskt Flyg

Swedish stakeholders, airlines operating domestic air traffic in Sweden and stakeholder organisations. In addition, we considered it appropriate to contact both Swedish and international airlines that might become potential competitors in the Swedish aviation market.

The Competition Authority also gathered and compiled information on FFPs by means of regular contact with sister organisations in both the Nordic area and the EU. Contact was maintained within the framework of the Nordic Task Force on Airline Competition (*Samnordisk flygarbetsgrupp*), and is still being maintained within the framework of the ECA Air Traffic Working Group.⁷

Under the terms of the mandate, the agency carried out its work in consultation with the Swedish CAA and the Swedish Consumer Agency by means of regular consultative meetings. Also, on its own initiative, the Competition Authority consulted with the National Tax Board (*Riksskatteverket*) as it was felt that tax issues relating to FFPs also needed to be addressed.

The Competition Authority called upon Fredrik Carlsson (PhD) of the Department of Economics, School of Economics and Commercial Law, Gothenburg University, to analyse the impact of FFPs on airline prices and number of departures, using an econometric model. Estimates were formed on the basis of quarterly data for the period 1992 up until the third quarter of 2002. Switching costs, i.e. the cost to the traveller of switching from one airline to another, were calculated by means of a specific model. Supporting data for the analyses was largely obtained from the Swedish CAA and from the carriers themselves.

Under the terms of the mandate, the Competition Authority was to review the effect on competition and on consumers of imposing restrictions on the use of FFPs in the Swedish domestic aviation market. The *travaux préparatoires* of the Competition Act⁸ define consumers not just in the normal sense of the word but also as end users in the aviation industry and buyers intending to sell the products to others. In the present report, therefore, the term

⁷ ECA (European Competition Authorities)

⁸ Govt bill 1992/93:56 p. 78

consumers encompasses both private travellers and undertakings whose employees travel on business.⁹

The report is structured as follows. Chapter 2 outlines the Swedish domestic aviation market and includes an initial background account of the liberalisation process. Much of this chapter focuses on competitive relations in the market and on passenger traffic and ticket price trends in the Swedish domestic aviation market.

Chapter 3 describes various types of bonus and discount systems for frequent flyers, and the supply and use of such programmes in the domestic market. This chapter also describes the difference between FFPs and other bonus systems and discusses European and US frequent flyer programmes.

Chapter 4 examines current competition, consumer and tax legislation of relevance for FFPs, as well as case-law in this area. Chapter 5 discusses the incentive and competitive effects of such programmes and also describes the outcome of an empirical study of the domestic aviation market.

Chapter 6 describes international efforts in relation to FFPs and to their competitive impact. A significant part of the chapter is devoted to the work under way in this area in the Nordic countries. The work of the competition authorities in the EU/EEA, the European Commission¹⁰ and the OECD is also discussed. This chapter gives an indication of the ways in which Sweden might actively pursue, at international level, especially in respect of the EU and its domestic markets, the question of limiting the use of FFPs in the aviation sector.

Chapter 7 looks at the implications from a European viewpoint of introducing unilateral restrictions on FFPs in domestic aviation. This account is based to a great extent on the views expressed by airlines and stakeholder organisations. A summary of the report is provided in Chapter 8, which also contains proposals for action aimed at improving competition.

⁹ In the present report, the term traveller is used to describe the person making the journey, irrespective of whether this involves private or business travel, while the term customer is used to describe the individual or company paying for the journey.

¹⁰ Hereinafter, the European Commission is referred to simply as the Commission.

2 The Swedish domestic aviation market

- Sweden is a large country in geographical terms but has relatively few inhabitants, most of whom live in the central or southern regions. This settlement pattern affects the structure of the domestic air transport market.
- The market is characterised by a hub-and-spoke system with Arlanda (Stockholm) as the only hub. SAS and Skyways are in a strong position at Arlanda. SAS owns a share in and cooperates extensively with Skyways.
- Between them, SAS and Skyways have almost a 60 per cent share of the start and departure times (slots) at Arlanda.
- Market concentration is high. SAS has had between 70 and 95 per cent of the market since liberalisation was introduced in 1992. SAS's principal competitor in the domestic market is Malmö Aviation.
- Prices in the domestic market have increased considerably more than prices as a whole since liberalisation was introduced in 1992.
- The air travel market is subject to complex regulations at both national and international level.
- Previous studies show that the potential exists for competition on up to 10 routes.

Structural conditions in the Swedish domestic aviation market are such that newcomers starting up scheduled air services can expect to encounter considerable difficulties, and competitive potential is

limited. Arlanda is the hub in a hub-and-spoke system¹¹, which means that practically all flights in Sweden, both domestic and international, go via this airport. With Arlanda as the hub, SAS operates 14 domestic routes to various parts of the country and cooperates with Skyways and a number of other regional carriers. Thus SAS can offer customers an extensive domestic network of routes. Together with its partners, it is the only carrier with a nationwide network in Sweden. SAS also operates a considerable amount of international traffic, based, like its domestic services, on Arlanda.¹²

SAS's principal competitor in the domestic market is Malmö Aviation, which has a network encompassing five destinations, largely from Bromma Airport. Skyways, which is the largest regional carrier in Sweden, operates flights to 20 destinations.

2.1 The liberalisation of air travel¹³

The EU began liberalising the air transport sector in Europe in 1979. The liberalisation process was undertaken in several stages, of which stage three, the 'Third Package', relating to market entry, pricing and the licensing of carriers entered into force on 1 January 1993.

The Third Package for the liberalisation of air transport gave carriers in the EU with valid operating licences¹⁴ the right to operate services on intra-Community routes. In April 1997, the EU

¹¹ The major carriers' service networks have increasingly developed into hub-and-spoke systems, i.e. the various routes meet at a junction that serves as a transit point for passengers. By directing passengers from the various spokes in the system via a hub, traffic density for each spoke leading from the hub is assumed to increase. A highly developed hub-and-spoke system is believed to generate benefits of scale, which increase when a number of such systems are combined.

¹² The SAS annual report for 2003 shows that the company had an 80 per cent share of the Swedish domestic aviation market.

¹³ This chapter is based principally on material from a report by the Swedish CAA entitled 'Market Potential in Domestic Aviation: Measures for Improving Competition' (Luftfart och Samhälle Rapport 2001:6).

¹⁴ Licences for carriers established in the Community to engage, against payment, in the air transport of passengers, post and/or goods.

introduced a rule allowing licensed carriers from any member state to operate in the territory of any other member state, i.e. full cabotage.¹⁵ In addition, the Third Package enabled carriers to introduce free pricing while at the same protective measures were put in place to safeguard consumer and trade interests.¹⁶

In 1989, the Competition Commission¹⁷ made a special study of how regulated sectors of the Swedish economy, including the transport sector, might be exposed to competition via legislative changes. The Commission took the view that the domestic market would be ripe for such exposure in the early 1990s. The chief external reasons were the liberalisation process then under way in the EU, which would force Swedish airlines to adjust to competition, and the sharp increase in the volume of Swedish domestic air travel, where the number of passengers grew by more than 250 per cent between 1980 and 1990. Also, liberalisation of domestic aviation in the US in 1978 had streamlined the market, resulting in a better general supply and lower prices. In principle, the Competition Commission argued, competition in the domestic market would lead to greater freedom of choice for consumers, greater freedom of market action for airlines, not least for charter companies and regional carriers, and greater cost efficiency in airline operations, resulting in lower prices to the consumer, and would also give the market free rein to adjust prices and supply to consumer demand.

In its 1992 Budget Bill¹⁸ the Government proposed the introduction of new guidelines for the licensing of carriers in the Swedish domestic market. These involved the liberalisation of domestic air travel to allow the market to decide price levels, supply and capacity. The principal purpose of liberalisation was to introduce free competition and thereby improve services and bring down prices.

¹⁵ In principle, this gave carriers free market access in the EU, Norway and Iceland under the EEA agreement.

¹⁶ Report of the Swedish CAA, 'Market Potential in Domestic Aviation: Measures for Improving Competition', pp. 104-106.

¹⁷ Report of the Competition Commission (SOU 1990:58)

¹⁸ Budget Bill for 1992 (1991/92:100)

The market for domestic air travel in Sweden was opened up to competition on 1 July 1992. At that time, SAS, which for many years had been able to build up its operation without any appreciable competition, enjoyed a very strong position that could almost be described as a monopoly of the Swedish domestic aviation market.¹⁹ Liberalisation gave new players the opportunity to establish themselves in the market, and free pricing ensued.

2.2 Competition in the domestic market

When the market was exposed to competition, SAS and Linjeflyg together had a market share in excess of 95 per cent.²⁰ Shortly after liberalisation was introduced in the domestic market in 1992, SAS

¹⁹ In 1944, the privately-owned company SILA, which at this time was SAS's parent company, was given permission to operate scheduled air services, chiefly to foreign destinations. Prior to this, the state-owned AB Aerotransport (ABA) company had monopolised all scheduled services. In 1948, ABA and SILA merged their operations, while continuing to represent the Swedish state and Swedish private enterprise respectively as SAS parent companies. SAS was established in 1946 by ABA and the corresponding Danish and Norwegian companies, DDL and DNL. The consortial agreement between the parent companies was concluded in 1951.

Linjeflyg was founded in 1957 as an SAS subsidiary. Its main task was to serve the domestic market, except in the case of services from Bromma (and later Arlanda) to Göteborg, Malmö, Luleå and Kiruna. Linjeflyg was allocated the routes that held no interest for SAS, while regional carriers were left to operate on routes that neither Linjeflyg nor SAS wished to serve.

²⁰ Prior to liberalisation, SAS had enjoyed a 38 per cent share of the domestic market and Linjeflyg 58 per cent. Liberalisation was aimed at encouraging competition between Linjeflyg and SAS. A few months before liberalisation was introduced, SAS acquired Linjeflyg, which meant that the two could not compete. The Swedish Antitrust Ombudsman concluded (NO 1992:177) that no buyer other than SAS could be found, and approved the purchase, although requiring SAS to fulfil nine conditions, the most important of which was that the airline release 100 of its 568 domestic slots per week during peak times of day.

Under the nine conditions, SAS was to 1) release 100 of its 568 slots for domestic flights at peak times, 2) not use more than a quarter of the capacity at Bromma Airport over a period of 24 months, 3) guarantee the regional carriers access to SAS's booking system on non-discriminatory terms over a 24-month period, 4) provide other airlines with airport services on commercial terms, 5) offer Swedish domestic carriers access to SAS's bonus system so that domestic flights became competition neutral, 6) refrain from underpricing on domestic routes, 7) guarantee competitors the right to conclude interline agreements over a 24-month period, 8) agree not to resist proposals for free cabotage in Scandinavia, and 9) agree not to reach exclusive agreements with dominant ground transport undertakings anywhere in Sweden.

encountered competition from the Transwede airline. The two carriers mainly competed on ticket prices. Competition between them, however, was short-lived, and both suffered heavy losses. In 1996 and 1997, Transwede was purchased by Braathens, which took over the routes that Transwede had served.²¹

When liberalisation was introduced, Skyways was created by merging Salair and Avia. By acquiring Airborne, Highland Air, Air Express and Flying Enterprise, Skyways expanded dramatically and by 1997 enjoyed almost 10 per cent of the Swedish market. In the same year, SAS and Skyways began cooperating extensively in a programme that largely involved Skyways adapting its services to those of SAS. By 1998, the network had expanded and in that year Skyways operated on 25-odd routes in Sweden, although none of them in competition with SAS or Braathens. As of the spring of 1998, Skyways owns 25 per cent of SAS.²²

Malmö Aviation began operations in 1981. Following deregulation, the company began flying the Bromma-Malmö and Bromma-Göteborg routes. Braathens purchased Malmö Aviation in 1998 and merged it with Braathens Sweden. The new company was given the name of Braathens Malmö Aviation and was based in Malmö. At the end of 1998, operations were halved and the airline concentrated its domestic flights to Bromma. In 2001, SAS purchased Braathens. Malmö Aviation, however, was excluded from the purchase and once again became a company in its own right.

In the autumn of 2001, another carrier, Nordic Airlink, engaged in limited competition with SAS on the Luleå-Stockholm route. In October 2002, SAS discontinued its domestic flights between Stockholm and Skellefteå and between Stockholm and Kristianstad. This created opportunities for new players. Nordic Airlink began competing with Skyways between Stockholm and Skellefteå, but

²¹ Bergman (2001) notes that SAS had an advantage in that it had many more departures per day on each route and a much more extensive network of services. In addition, the airline had managed, via a range of loyalty inducing agreements directed at travellers, employers and travel agents, to tie travellers to SAS. This proved more valuable than the relatively large cost advantage that Transwede/Braathens are said to have had.

²² State ownership in SAS amounts to 50 per cent, and due to SAS owning a quarter share of Skyways' stock, the state has an indirect interest in Skyways as well.

discontinued the service after only a short period. Skyways, however, continues to operate there. On the Skellefteå-Stockholm route, supply has increased by 40 per cent in terms of seating capacity and the number of departures has doubled since SAS left the scene. On the Kristianstad-Stockholm route, too, supply has increased, by 55 per cent in terms of seats available and by 100 per cent in terms of departures.

In 2002, a new traffic agreement was concluded for Bromma Airport. It enabled Malmö Aviation to expand its network to include Bromma-Umeå and Bromma-Kristianstad. In March 2002, Malmö Aviation began competing with SAS on the Stockholm-Umeå route.

On 25 October 2002, air travel agents Goodjet began operating regular services in Sweden between Stockholm and Göteborg and between Stockholm and Malmö in competition with SAS and Malmö Aviation. Goodjet had previously been operating flights on a number of international routes to and from Göteborg and Stockholm respectively.

A fully transferable return ticket (normal price) cost half as much as a ticket from Goodjet's competitors, SAS and Malmö Aviation. Goodjet introduced annual season tickets and punch cards for business travellers in a bid to attract this profitable customer segment away from its competitors. Besides reducing prices substantially in the business travel segment, Goodjet also offered low airfares to private travellers on all domestic routes, from SEK 199 for a one-way flight, including airport charges.

Both SAS and Malmö Aviation chose to answer this price challenge from Goodjet, most notably in the private travel segment. SAS, for instance, allowed students to fly for the same price as under-18s and offered single travellers the same prices as those normally reserved for accompanying persons. Malmö Aviation introduced its own low-price fare for some flights at a cost of just SEK 100 more than Goodjet's lowest price, applying this alternative on the Bromma-Säve and Bromma-Sturup routes.

Goodjet, however, ceased operating only six weeks after launching its services. A month later, the company filed for bankruptcy.

In January 2003, the low-price carrier Ryanair decided to relocate its Nordic traffic hub to Skavsta. From Skavsta, it plans to operate flights to six international destinations.²³ Ryanair has also announced plans to start domestic flights in Sweden and the company is negotiating with airports in Luleå, Umeå and elsewhere.²⁴

Since early 2001, a number of new players have begun operating in the domestic air travel market. In addition, players already established in the market have begun competing on some domestic routes where there was previously only one operator. By early 2003, over a dozen carriers were operating domestic flights in Sweden on some 70 routes. Compared to SAS, most of them were small operators in the domestic aviation market. On seven different domestic routes, air services were operating in competition.²⁵ In mid-February 2003, Kullaflyg²⁶ announced that it intended operating scheduled services in competition with SAS on the Ängelholm-Stockholm route.²⁷ If this transpires, it would mean a total of eight domestic routes operating in competition.

As a result of factors such as increased competition from low-price carriers on international routes²⁸ and the general economic downturn, SAS has been forced to review costs. SAS has a complex structure and the company is trying to cope with increased competitive pressures by breaking down its operations into submarkets. Significant numbers of jobs have been shed and further adjustments can be expected.

²³ Report in Svenska Dagbladet, 29 January 2003. Business supplement, p. 5.

²⁴ Report in Flygrevyn Express, No. 304 (5 March 2003).

²⁵ Report by the Swedish CAA: *Luftfart och Samhälle, Destinationsutbud*.

²⁶ A company backed by Gotlandsflyg and local stakeholders.

²⁷ Report in Aftonbladet, 12 February 2003.

²⁸ The number of business travellers on SAS's European routes has declined from 40 to 20 per cent – report in Svenska Dagbladet, 11 March 2003

2.2.1 Competitive conditions²⁹

The presence of hub-and-spoke systems and SAS's cooperation with regional carriers for the purpose of coordinating booking and ticket systems, as well as the through-checking of baggage to final destinations, all mean that passengers intending to continue on from Arlanda Airport, either to another domestic destination or to a destination abroad, usually choose to fly with SAS or one of its partners.³⁰

About 20 per cent of passengers to Arlanda fly on to another destination.³¹ This gives SAS a considerable advantage in the battle to attract domestic travellers changing planes at the airport. This in turn means that a carrier flying in competition with SAS from a given location to Arlanda, or flying in the opposite direction, can only compete with SAS for the custom of about 80 per cent of the passengers.³²

Bearing in mind that Sweden is a sparsely populated country and that many locations are not large enough to provide an adequate passenger base, competition in domestic aviation is necessarily flawed. In the case of larger population centres, too, it is often difficult for a carrier wishing to compete with SAS to attract a sufficient number of passengers, due partly to the fact that only SAS can offer customers an extensive network of services in the domestic air travel market and partly to the situation described above concerning the proportion of passengers whose final destination is not Arlanda.

²⁹ See also Competition Authority report, 'Competition in Sweden in 2002', chapter 11.

³⁰ By cooperating in alliances, airlines have been able to create global networks capable of offering customers a wide range of services throughout the world. As part of these alliance programmes, carriers can take advantage of one another's hub-and-spoke systems and are thereby able to offer a considerably larger number of destinations. Further, alliances enable partner carriers to coordinate timetables and routes in order to shorten waiting times for transit passengers, and to provide travellers with joint services, e.g. check-in management and lounge access. Carriers can also merge their marketing and sales activities. Another feature of alliances is that partners often coordinate their frequent flyer programmes.

³¹ Bergman, Mats, 'Economic review of the Swedish domestic and international aviation markets'. Swedish Competition Authority, 28 August 2002.

³² See also Market Court ruling MD 2001:4, court grounds, p. 43.

Another important competitive factor is the extent to which a carrier can offer customers appropriate and attractive departure times.

One factor that works to the advantage of a dominant player and imposes constraints on newcomers to the air travel market is limited access to attractive departure and arrival times, ‘slots’.³³ When liberalisation was introduced in 1992, SAS was allowed to keep its slots allocation at Arlanda. Given its large fleet and extensive access to slots, SAS would appear to be the only carrier in the Swedish market capable of adjusting to temporary fluctuations in demand by redistributing its aircraft and slots.

The system used in allocating slots at Arlanda and Bromma distorts competition due to the rule concerning ‘grandfather rights’, which favours those carriers that have previously utilised the slots allocated to them. Under this rule, an airline that has used its slots at least 80 per cent of the time during the current season is entitled to the same slots the following season. This means that SAS, which enjoyed a 95 per cent share of the Swedish domestic aviation market and thus had a substantial number of attractive slots when liberalisation was introduced, has largely been able to retain its level of access to Arlanda under present regulations.

At Arlanda in 2002, SAS was allocated almost 45 per cent and Skyways about 15 per cent of the total number of slots. This means that between them the two airlines had about 60 per cent of all Arlanda slots. At peak traffic times,³⁴ this share increases further. It is worth noting in this connection that in 2002 as many as 63 airline companies operated services to and from Arlanda, of which 56 operated exclusively on international routes, 4 on both international and domestic routes and 3 exclusively on domestic routes.

The domestic air travel market in Sweden is also affected by competition from high-speed trains and other substitutes. Regarding interchangeability with other forms of transport, trains and buses

³³ Further information concerning the problem of allocating departure and arrival times is provided in the Swedish Competition Authority report, ‘Departure and Arrival Times in Air Travel’ (2001:7)

³⁴ Peak traffic times at Arlanda are 06.30-09.00 and 16.30-19.00.

are the principal contenders. There are relatively few routes on which other transportation can compete with aircraft to any great extent. Rail transport may be an alternative to air transport under certain circumstances and on certain routes, primarily where passengers travel by the X2000 high-speed train. This applies in particular to the Stockholm-Göteborg route but also to the Stockholm-Malmö and Stockholm-Sundsvall routes. Over longer distances, air travel is in principle the only alternative.

Competition is also affected by other factors, such as FFPs.³⁵ Such programmes can affect both prices and supply. Exactly how prices and number of departures are affected, however, is not altogether clear, due to such factors as the extent to which customers perceive the services offered by airlines to be interchangeable and how price-sensitive customers are.³⁶

Competitive relations can be assessed on the basis of existing supply in the form of seating capacity, which provides a measure of the passenger base on a given route.

On the Stockholm-Göteborg and Stockholm-Malmö routes, the number of available seats per week in 2001 totalled at least 20,000. Air services on these routes were operated in competition. Capacity on the Stockholm-Luleå and Stockholm-Umeå routes, which lacked competition, was 10,000 seats per week. On the domestic routes placed six to ten in order of size – the services to Ängelholm, Östersund, Visby, Ronneby and Kalmar – some 5,000 seats per week were available and there was no competition on any of them. Meanwhile, Skyways and Gotlandsflyg are competing on the Stockholm-Visby route. There, however, the number of available seats is only 4,500 per week.

Even if the number of seats available at a given time can serve as a guide when assessing competitive relations, it should be emphasised that such a criterion can be misleading.

³⁵ FFPs in the Swedish market are dealt with in closer detail in Chapter 3.

³⁶ In Section 5.2, we describe the incentive and competitive effects of FFPs. In Section 5.3, we describe an empirical study of the impact of FFPs on airline company prices, on the number of departures and on switching costs in the Swedish domestic aviation market.

On a route where only a single airline is operating services, seating capacity will correspond more closely with the actual number of travellers than in the case of a route operated by two or more airlines. This is even more pronounced in situations where entry barriers to the market are high and the incumbent carrier does not feel threatened by any potential competitors. Price cuts, resulting for instance from the market entry of a new carrier, will, all else equal, boost demand. Persons who have not travelled previously and persons who normally use other forms of transport will choose air travel. As a result of lower prices, 'new' travellers can be attracted to a given air route. In other words, there is a risk that an assessment based on historical data for seating capacity will be misleading. A number of studies have been carried out into competitive relations in Sweden.³⁷ A report by the Swedish CAA, 'Market Conditions in Domestic Aviation',³⁸ included a comparison between routes showing that there appeared to be room for competition on at least four of the largest routes in Sweden and possibly on as many as ten.

At the beginning of 2003, there were seven competitive routes in the Swedish domestic aviation market.³⁹ SAS was competing with Malmö Aviation on the routes from Stockholm to Göteborg, Malmö and Umeå respectively, while on the Stockholm-Luleå route SAS was competing with Nordic Airlink. On the smaller routes (in terms of passengers) from Stockholm to Kristianstad, Visby and Trollhättan respectively, Skyways was competing with Malmö Aviation, Gotlandsflyg and Golden Air. Experience seems to show that an applicant carrier must deviate from the incumbent carrier if it is to succeed. This can be achieved in a number of different ways. One way is via geographical deviation, by avoiding the dominant carrier's main hub. The newcomer can fly between other destinations, if there is a large enough passenger base. Alternatively, it can fly from another destination to Arlanda, as in the case of Malmö Aviation. Another course of action is to use

³⁷ According to the decision of the Market Court, MD 2001:4, testimony showed that there was competitive potential in the domestic market at the time, at least on four or five routes.

³⁸ Report from the Swedish CAA, 'Market Conditions in Domestic Aviation' (*Inrikesflygets marknadsförutsättningar, Åtgärder för att förbättra konkurrensen*, 2001), p. 82.

³⁹ Report from the Swedish CAA, 'Range of Destinations', (*Luffart och samhälle, Destinationsutbud 2002:9*).

smaller aircraft on routes with a small passenger base. A further alternative is to deviate from the dominant carrier by offering lower prices with a lower standard of service.⁴⁰

Low-price airlines⁴¹ are a relatively new phenomenon in the aviation industry, although in many respects they resemble traditional charter companies. From an accountability viewpoint, it should be stressed that there is a difference between low-price airlines with licences to fly and low-price airlines that lack such licences but which act as organisers and agents for air travel. The niche of the low-price airline is specifically cost reduction aiming at lower prices. Such carriers reduce costs in many different way, for instance by using only one type of aircraft, resulting in lower maintenance costs, by having fewer departures per day, by flying between the cheaper secondary airports of major cities and by placing seats closer together. In addition, low-price airlines generally maintain a lower standard of service, both on board and on the ground, and tend to have lower marketing costs. Low-price airlines have an important edge on traditional airlines precisely because of their low cost levels. A strategic drawback in their fight to attract transit passengers, however, is that they generally lack a network system or have only a very limited one.

The most successful low-price airline in the US is Southwest Airlines. Since its arrival in 1967 it has grown to almost three times the size of SAS in terms of passenger volume. The European Commission estimated that the European low-price airlines transported about 4 per cent of all air passengers in the EU in 1997. In Europe, the most successful airline of this type is Ryanair, which has grown to about half the size of SAS since it was launched in 1985. Ryanair's profit margin was just over 20 per cent in 2000, while SAS's margin was just over 7 per cent. Ryanair's principal markets are the UK and Ireland, but the airline is growing rapidly in Germany, Scandinavia and other parts of Europe.

⁴⁰ Report from the Swedish CAA, 'Market Conditions in Domestic Aviation' (*Inrikesflygets marknadsförutsättningar, Åtgärder för att förbättra konkurrensen*, 2001), p. 82ff.

⁴¹ Low-price airlines offer a limited range of services and in that sense could also be labelled low-service airlines. In the present report, the term low-price airline is used throughout.

Ryanair and Southwest Airlines use only Boeing 737s, which is the type of aircraft SAS generally uses for domestic air travel. On domestic routes in Sweden in 2002, SAS had a load factor, i.e. number of passengers as a proportion of total seating capacity, of 64 per cent. During the same period, Ryanair's load factor was around 85 per cent, Southwest Airlines' just over 70 per cent and EasyJet's about 77 per cent.⁴²

2.3 Development of domestic air travel

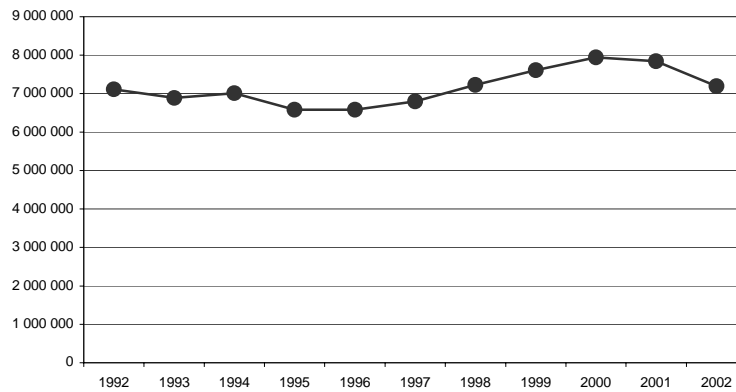
2.3.1 Passenger traffic trend

At the beginning of the 1970s, almost two million passengers flew on domestic flights in Sweden, while about twice as many flew on international flights. The volume of domestic passengers then increased rapidly. In the mid-1980s, the number of domestic passengers overtook the number of international passengers.

When liberalisation came to the domestic aviation market in the summer of 1992, the Swedish economy was in deep recession. During that year, the number of domestic passengers at Swedish airports had declined considerably, due in part to the economic recession. In 1990, the number of domestic passengers totalled 8.7 million, while in 1991 it had fallen to 7.2 million.

Volume continued to decline over the next few years and it was not until 1997 that the negative trend was broken with an increase in passenger numbers, as shown in Figure 1 below. Passenger volume increased further during the following three years and in 2000 totalled just over 7.9 million flyers. Despite this increase, the number of passengers was still less than in the record year of 1990. Since 2000, the number of domestic passengers has declined by almost a million. The number of international passengers continued to increase in the 1990s and amounted to almost 16 million in 2000.

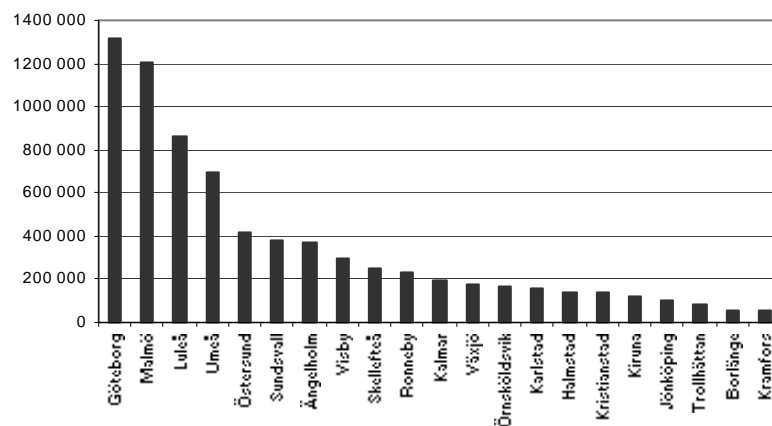
⁴² The figures are taken from each respective airline's annual reports and websites.

Figure 1 Number of domestic passengers 1992-2002

Source: Swedish CAA

Almost all domestic passengers fly either to or from Stockholm or pass through it while travelling between two other points in Sweden. According to statistics from the Swedish CAA, approx. 97 per cent of all domestic traffic, in terms of the number of passengers, is found on routes to and from Stockholm. A limited number of horizontal routes have existed and still exist but they are small in terms of volume. Volume varies considerably between routes, from just over 1.3 million year passengers on the Stockholm-Göteborg route to just over 6,000 on the route between Stockholm and Torsby/Hagfors. Figure 2 shows the distribution of passengers between Stockholm and airports with over 50,000 year passengers in 2001.

Figure 2 Number of passengers between Stockholm and airports with over 50,000 year passengers, 2001



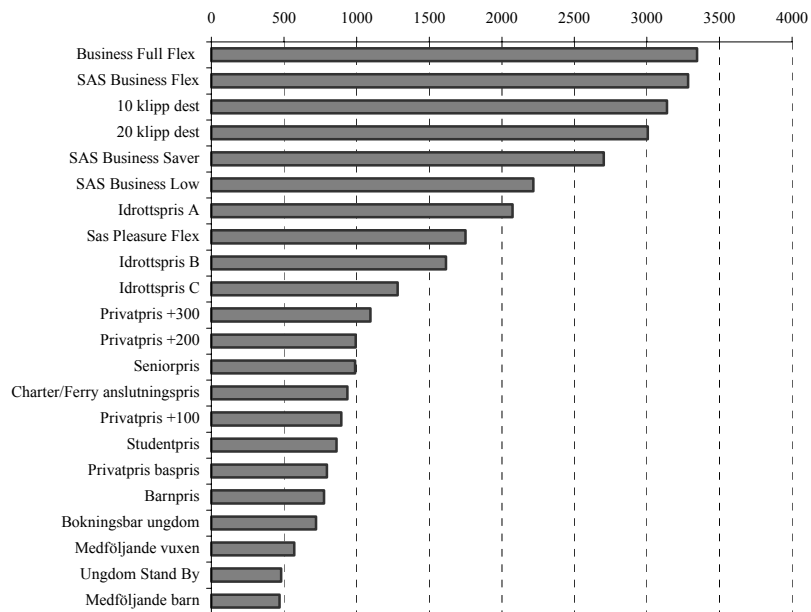
Source: Swedish CAA

2.3.2 Ticket price trend

Air ticket categories

Following liberalisation, there was an increase in the price differential as a result of new air ticket categories being created. Airlines sought to take advantage of differing levels in customers' willingness to pay, and applied what is termed yield management. On the Stockholm-Göteborg route, for instance, SAS had 22 different categories in June 2001, as shown in Figure 3 below. Besides these air ticket categories, various types of annual or six-month season tickets were available, enabling travellers to purchase an unlimited number of journeys and to pay prices scaled to the number of journeys undertaken. What distinguishes the various air ticket categories from one another are the terms of travel. In general, prices can be said to increase with the degree of flexibility a category offers the traveller, such as freedom to change reservations.

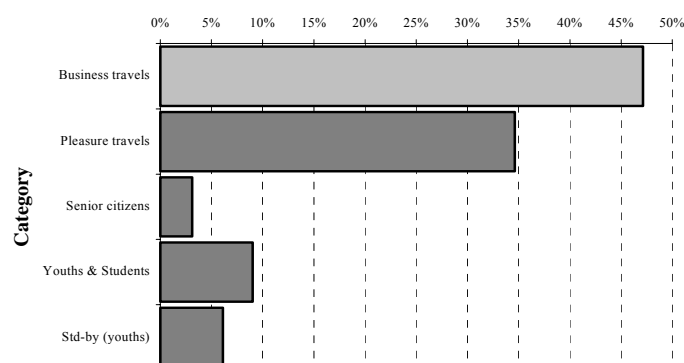
Figure 3 Air ticket price categories for SAS on the Stockholm-Göteborg route 2001



Source: Swedish CAA

Figure 4 shows the distribution of SAS passengers in different air ticket categories in 2000. Among SAS travellers, the number flying on other tickets was slightly larger than those flying on business tickets such as 'Business Full Flex' or 'Business Saver'. By comparison, 60 per cent of those who travelled with Skyways had business tickets. The combined share of sold business tickets among SAS and Skyways passengers was almost 50 per cent.

Figure 4 Distribution of SAS passengers by air ticket category, 2000.



Source: Swedish CAA

According to national studies of travel habits in Sweden,⁴³ business travellers accounted for almost 57 per cent of the overall length of journeys undertaken in 1995. The corresponding figure for 2000 was 45 per cent. Thus a change in domestic travel habits could be said to have occurred in that business travellers are increasingly using tickets traditionally purchased by private travellers.⁴⁴

Price trend

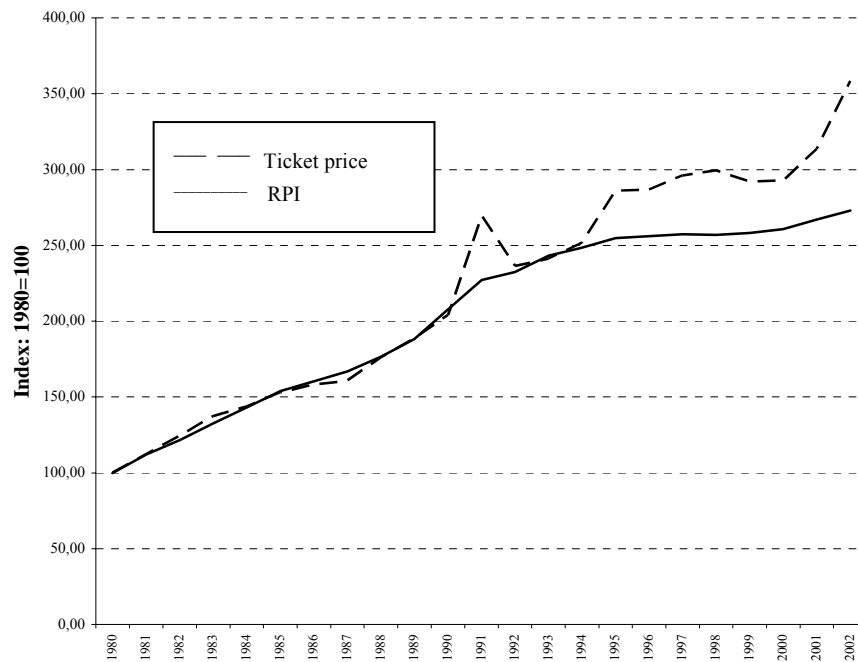
Changes in air ticket prices can be measured in many different ways. The price of a certain type of ticket on a given route can be studied over time, for instance. This can be misleading, for a number of reasons. Bergman (2002) has found that the number of price categories has successively increased, both in Sweden and abroad, due primarily to the introduction of new categories with lower air ticket prices. This increases the spread between high-price and low-price tickets respectively and means that an air ticket in a category offering a low price at a specific time may eventually rise in price.

⁴³ Riks-RVU and RES.

⁴⁴ The division of private and business travellers is based on ticket price levels and not on the purpose of journeys.

Statistics Sweden (SCB) has long been monitoring airfare price trend in the Swedish domestic aviation market.⁴⁵ Air travel is included as a component in the Retail Price Index (RPI) showing general price trend in Sweden. As the RPI focuses on private consumption, the SCB originally monitored only price trend for domestic air travel among private passengers. Figure 5 shows the price trend for private domestic air travel between 1980 and 2002, and also shows the RPI.

Figure 5 Price trend for private domestic air fares, and RPI trend, 1980-2002



⁴⁵ Airlines supply details of ticket prices for private and business travel respectively on a monthly basis. In the case of private travel, the SCB measures the price for a basket of flights, weighting them differently for different routes and ticket categories on the basis of an assumed average purchasing pattern for private travellers. In the case of the business travel segment, factors such as commuter punch cards, bundled tickets and company tickets are taken into account. The studies are confined to the largest air routes in terms of turnover and ticket category. The weighted averages for airlines, air routes and ticket categories are updated annually and are based on current turnover data obtained from the airline companies.

Source: Swedish CAA

As Figure 5 shows, in nominal terms the price of an air ticket increased substantially in the 1980s. The inflation rate was high, however, and the price of private domestic air travel fell sharply in real terms. After 1992, the rate of increase was nominally lower than in the 1980s, but in real terms considerably higher.⁴⁶

Since 1996, the SCB has also been measuring price trend for business air travel on domestic routes. Between December 1995 and December 2002, business air travel prices nominally increased by 25 per cent, according to the SCB. During the same period, prices for private air travel increased by just over 32 per cent. The corresponding increase in the RPI was 8 per cent, i.e. considerably lower. In other words, the price of domestic air travel has increased to a significantly greater extent than the general price level.

Analyses carried out by the Swedish CAA on the basis of the airlines' official timetable publications and list prices show that since liberalisation was introduced, domestic air travel has become more expensive on most routes. Prices on different routes have shown different patterns. In general, price increases have been lower than the average on routes with a large number of passengers. This applies in particular to routes where competition has prevailed for an appreciable length of time.⁴⁷ Prices on routes with relatively few passengers, meanwhile, have increased fairly substantially.

Of the ten routes that have shown the greatest price increases, two are operated by SAS and most of the others by Skyways. The greatest price increases have occurred on routes previously served by SAS but subsequently operated by Skyways.⁴⁸ The significant increase in prices on these routes began as early as 1993 when SAS was the operator.

⁴⁶ When air travel became liable to VAT in 1991, the price rose by 25 per cent. The VAT rate has since been changed on several occasions. On 1 January 2001, it was reduced from 12 to 6 per cent.

⁴⁷ E.g. Luleå and Umeå.

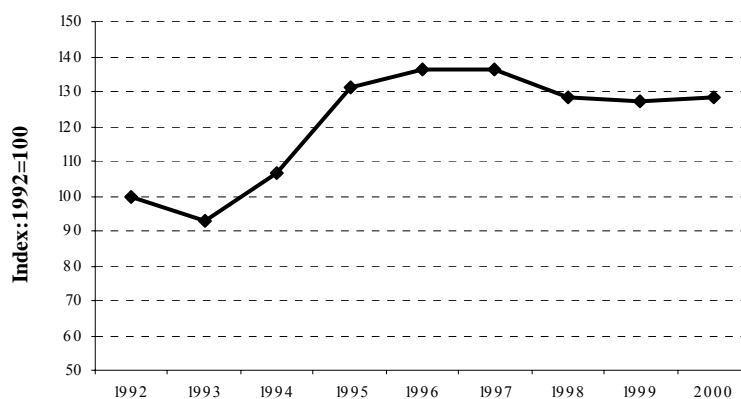
⁴⁸ E.g. Borlänge, Visby and Jönköping.

A further observation by the Swedish CAA is that pricing has become increasingly distance-related. This means that routes involving comparatively short distances have experienced the greatest price increases. There is a negative correlation between ticket prices and distance travelled – the shorter the distance, the higher the kilometre price.

Average prices

As noted above, there is now a considerable variety of air ticket categories. A general picture of the price trend situation can be obtained by studying the mean price, i.e. the weighted average price paid by the customer. On a one-off basis, the Swedish CAA has been given information by the airlines dating to 2000. Some information pertaining to certain routes and year is missing, largely due to the fact that the airlines previously operating on these routes no longer exist. SAS has provided the Swedish CAA with a complete picture of the airline's average price trend. Figure 6 shows how SAS prices have changed since 1992.

Figure 6 Real trend in SAS average price per passenger, 1992-2000



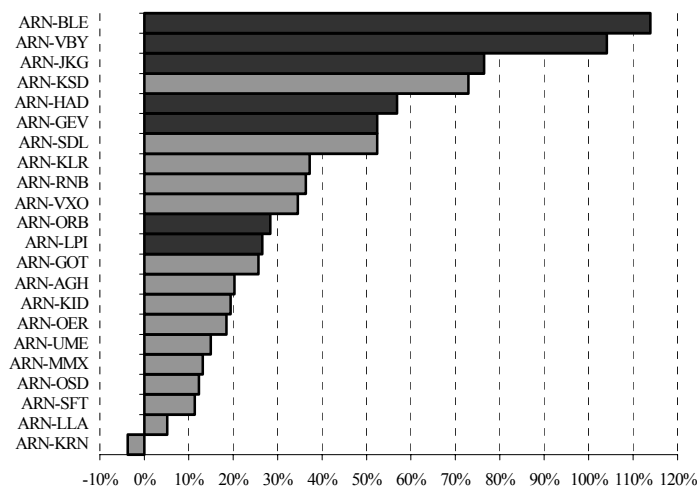
Source: Swedish CAA

In the first year after liberalisation, prices fell as a result of the competition that SAS encountered, in particular from Transwede. The price war did not last long, however, and by 1994 the price

level had once again surpassed the 1992 level. Reduced prices in combination with lower demand due to the economic recession resulted in heavy losses for the company. These losses were followed by substantial price increases, especially in 1994 and 1995. Between 1998 and 2000, prices were comparatively unchanged. For the period 1992-2000 as a whole, SAS raised its air ticket price by approx. 28 per cent, which works out at an average of 3.2 per cent/annum in real terms.

It has not been possible to obtain information about average price trend in the case of all domestic routes. The data to which Swedish CAA has had access is apparent from Figure 7 (SAS routes are shaded grey).

Figure 7 Real change in average prices for different air routes, 1992-2000



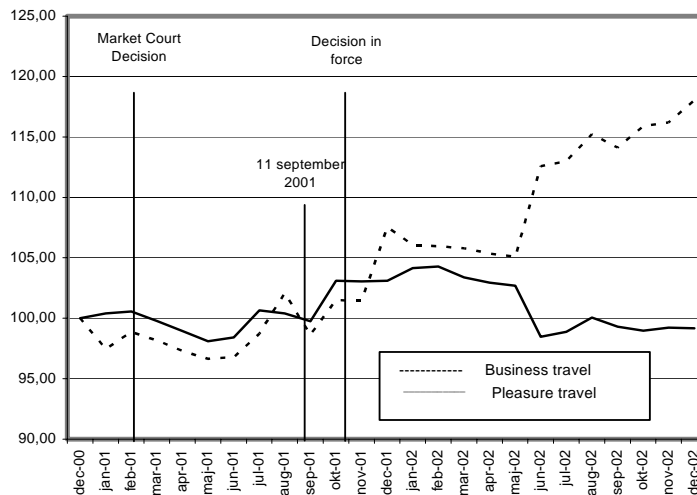
Source: Swedish CAA

The conclusions previously reached concerning which routes have experienced the largest and the smallest price increases are confirmed by the average price trend in the above. A common denominator for the five routes on which prices have increased most is that they were previously operated by SAS/Linjeflyg and are now operated by Skyways.

Price trend since 2001

As mentioned earlier, the Market Court delivered a ruling on 27 February 2001 concerning SAS's use of its frequent flyer programme.⁴⁹ Under the court ruling, SAS has been prohibited from applying its FFP in such a way that points or the equivalent for the redemption of bonus offers can be earned on domestic flights between destinations where SAS, or airlines cooperating in an alliance with SAS under the programme, are in competition. SAS, however, is still free to award points on other domestic routes. Other airlines are free to award points on all domestic routes, regardless of whether they are in competition or not. Figure 8 shows how relative prices for the private and business segments respectively have changed since 2001.⁵⁰

Figure 8 Relative price trend since 2001 for private and business air travel in the domestic market, December 2000=100



Source: Statistics Sweden

⁴⁹ MD 2001:4.

⁵⁰ Relative prices have been calculated as nominal prices in relation to the Retail Price Index (RPI).

Relative prices for the two segments were virtually unchanged from the beginning of 2001 up until the date when the Market Court injunction entered into force. Between the events of 11 September 2001 and the entry into force of the court decision, prices increased in both the private and public air travel segments. From the fourth quarter of 2001 onwards, there was a marked increase in relative prices for private travellers, but prices then fell in the first half of 2002.

From May 2002, relative prices for private travellers increased substantially, while prices in the business travel segment declined. During the summer and autumn, prices in the private travel segment increased further, although at a slightly slower pace, while prices in the business segment increased marginally and then stabilised.

In sum, from the entry into force of the Market Court prohibition and up until the end of 2002, the relative price of tickets normally purchased by private travellers increased by almost 16 per cent. In the case of tickets normally purchased by business travellers, the relative price showed a 4 per cent fall during the corresponding period.

3 Supply of frequent flyer programmes

- Frequent flyer programmes (FFPs) are an important competitive instrument that seek to induce loyalty.
- An airline with an extensive network and a wide range of products can offer a more attractive bonus programme that strengthens loyalty to the company. Alliances and other forms of cooperation strengthen loyalty further.
- FFPs differ from other types of discount or bonus systems in several respects.
- Bonus points normally accrue to the business traveller personally despite the fact that the employer pays for the journey.
- In principle, FFPs display the same characteristics irrespective of whether they are Swedish, European or American.

Most industries have bonus or discount programmes of some kind and the air travel industry is no exception. All such programmes are used for marketing purposes and represent instruments for marketing a specific product or a service. One such instrument is a loyalty programme, the express purpose of which is to strengthen customer loyalty and develop strong customer relations. The aim of such programmes is generally to offer customers some kind of reward, often in the form of a price reduction or a higher membership level for travellers using a service frequently.

For a loyalty programme to work, the user must acquire information about the customer. Customers must first be identified and described, especially the most important ones. A feature of many markets is that a relatively small proportion of customers account for a relatively large share of income. In the air travel field, business travellers account for a significant share of airline turnover and profit. Frequent flyer programmes, FFPs, help to identify these travellers.

Following identification, customers' purchasing habits must be studied – how often they buy, what products they demand and what amounts of money different customer categories spend. By gathering such information, companies can develop efficient marketing strategies targeting specific customer groups.⁵¹

Loyalty programmes represent powerful marketing instruments in the air travel industry. In the US, travellers in FFPs earn almost 50 per cent of their points from the purchase of products and services other than air flights, primarily via telephony, hotel accommodation, car rental and financial services. Points can also be earned via credit card purchases.⁵²

3.1 Loyalty programmes in civil aviation

The air travel industry offers a wide range of bonus or discount programmes. The present report is primarily concerned with the loyalty programmes in civil aviation commonly referred to as frequent flyer programmes or FFPs,⁵³ under which participants are rewarded with free travel, service benefits and other perks.

Airlines also offer more traditional types of bonus or discount programmes. One example is the use of travel passes, which award customers a price reduction for each journey when they buy several trips at once, or annual season tickets, which give customers a reduced price for each journey purchased over the next 12 months. Both involve initial investments, but the price reduction is nevertheless relatively easy to calculate. In addition, there are company agreements under which undertakings sign volume agreements with carriers and are given a discount in return.

FFPs were introduced in the US in the early 1980s. The first programme of all was launched by American Airlines in 1981 and was entitled the Aadvantage Travel Awards Programme. The

⁵¹ Mauri (2002)

⁵² 'Fly me to the moon', The Economist, 2 May 2002

⁵³ The term frequent flyer programme or FFP is used throughout in this report to denote bonus or discount programmes in civil aviation that reward frequent flyers with free travel or other benefits of a similar nature.

company registered travellers who flew frequently and these customers were subsequently given baggage labels they could be recognised by, and also better meals on board from their own menu. After a while, travellers who flew frequently were given the opportunity to earn points that could be redeemed against certain benefits such as free travel to a range of destinations and upgrades to a higher cabin class.

Other airlines in the US also began introducing FFPs and allowed participants to earn points on other purchases besides air trips, including car rental, hotel accommodation, telephone subscriptions and credit card purchases. In the mid-1980s, virtually all major US airlines ran some form of frequent flyer programme.

No such programmes existed in Europe in the 1980s. European airlines then began to realise that European travellers were increasingly choosing US carriers for trans-Atlantic flights, and that they themselves were losing traffic to US airlines, especially business travel. Consequently, European airlines began entering into partnerships with US airlines.

In the early 1990s, the first FFPs were introduced in Europe and were followed by additional programmes in 1991 and 1992. The European programmes were considerably smaller in terms of membership than the US ones, and were initially more restrictive in their rules, but gradually came to resemble the American FFPs.

3.2 Comparison between FFPs and other loyalty programmes

While FFPs resemble other loyalty programmes⁵⁴ in many respects, they differ from them in some, for instance in the way they are formulated and in the rewards they offer. As in the case of other loyalty programmes, members are rewarded for using a particular product or service.

⁵⁴ E.g. food chain stores' customer cards, such as Coop MedMera and ICA Kundkort in Sweden, and petrol companies' fuel or credit cards.

FFP content

The difference between frequent flyer programmes and other loyalty programmes lies primarily in the way they are designed. FFPs have a sophisticated points system. In addition, they include entry or threshold levels, time and membership limits and ‘blackout periods’, and the airlines also reserve the right to modify their programmes or terminate them.

Bonus points in an FFP have two different purposes and could be described as two different types of points. One type can be used to claim free travel, hotel accommodation, car rental, financial services or the like. In such cases, the points are valid for a lengthy period, from a few years up to lifetime duration. Points can never be redeemed against cash. Another points category, for service points, can be used to upgrade passengers’ service levels, often designated Gold, Silver or the like. These higher service levels entitle members to special privileges every time they fly, e.g. fast-track check-in, access to special lounges at airports, higher priority in the ticket reservation system, and seating and meal preferences on board. Service points are valid for a shorter period, usually 12 months. After that, members are required to accrue the same minimum number of points each year to keep their higher level of service.

Members can earn points for each flight. The points vary, depending on the destination and distance and in which class the person flies, which means that travellers earn more points on long-distance flights and flights in business class or first class than on flights over shorter distances and flights in tourist class. Some airlines do not award any points at all for certain kinds of travel.

For the most part, entry levels or thresholds mean that members cannot redeem and make use of the points they have earned until they have accumulated a predetermined number. Members are guaranteed different kinds of benefits which increase the more they fly, but the benefits do not become available until the member has earned a given number of points. Consequently, members are less interested in flying with a rival airline even if that airline offers a lower price or a more suitable travel alternative.

Time and membership limits work in a similar way as ‘use by’ dates, partly because membership of the programme may be

terminated if the member earns no points over a fixed period, which means accrued points are forfeited, and partly because the points are only valid for a certain length of time.

The term blackout periods refers to periods during which the airline has decided that members cannot redeem points, e.g. the peak season or peak traffic times. Also, in their agreements with their members, airlines have to a great extent reserved the right to introduce programme changes, such as new levels for earning and redeeming points and the right to terminate the programmes.⁵⁵

Membership

As in the case of most other loyalty programmes, membership of an FFP is personalised. Thus it is the individual traveller who belongs to the programme and who earns the points. As a rule, however, points can only be redeemed by the member and his/her family, or in certain cases by someone accompanying the member on the journey.

Frequent flyer programmes are open to all air travellers, including private travellers, but they specifically target business travellers.⁵⁶ An important aspect of FFPs is that business travellers do not pay for their journeys themselves as they are flying on business. Thus points earned accrue to the business traveller personally despite the fact that it is the employer who pays for the travel. The private use of bonus points earned through business travel is taxed as earned income in many countries. In practice, however, it is difficult to tax this kind of benefit as the tax authorities do not have sufficient verification data at their disposal.⁵⁷

Reward

In contrast to other loyalty programmes, reward in FFPs does not take the form of cash but of free services, and these do not

⁵⁵ In practice, opportunities for airlines to make changes in their FFPs are probably more limited than the agreements suggest, due partly to statutory legislation and partly to the airlines' desire to retain goodwill.

⁵⁶ Business travellers are defined as those travelling on business.

⁵⁷ This is discussed in greater detail in Section 4.1.3

necessarily fall into the same category as the service purchased, i.e. air travel. When threshold levels are also factored in, this use of non-monetary reward makes it difficult to calculate and evaluate the size of the reward in relation to the total purchase value. An additional factor in evaluating reward is the considerable benefit to members of having access to a higher service level when a certain membership status has been achieved.

Another difference compared to most other loyalty programmes is in the size of the reward in relation to total purchase value. In FFPs, reward is often 5-15 per cent while in other programmes it tends to be only one or two per cent. Also, FFPs differ in that each member's total purchase value, especially in the business travel segment, is relatively high.⁵⁸

Market dominance and network effects

Most of the major airlines cooperate via voluntary bilateral or multilateral agreements, known as alliances. Such partnerships usually involve FFP cooperation, either through the introduction of a joint programme or through collaboration with other programmes in the alliance. As a rule, cooperation in FFP alliances means that travellers can use bonus points in a partner carrier's programme.

Figure 9 Alliances

ONEWORLD	SKYTEAM	STAR ALLIANCE	WORLDPERKS
Aer Lingus	AeroMexico	Air Canada	AirAlps Aviation
American Airlines	Air France	Air New Zealand	Alaska Airlines
British Airways	Alitalia	ANA	Continental Airlines
Cathay Pacific	CSA	Austrian Airlines	Copa Airlines
Finnair	Delta Airlines	BMI	Hawaiian Airlines
Iberia	Korean Air	Lauda	KLM
LanChile		Lufthansa	Malev
Qantas		Mexicana	Northwest Airlines
		SAS	
		Singapore Airlines	
		Thai	
		Tyrolean	
		United Airlines	
		Varig	
		Thai	

Source: The airlines' respective websites

⁵⁸ Holm (2000), p.2ff.

Besides such alliances, there are other types of airline partnerships that may also involve cooperation on FFPs. Moreover, airlines sometimes collaborate with other types of undertakings, such as hotel enterprises, car rental firms or finance corporations, primarily credit card companies. As a result of alliances and other forms of cooperation, members of a frequent flyer programme can earn bonus points when travelling with any of the partner airlines. Also, they can accumulate points when using the services of other undertakings with which the airline collaborates.

Furthermore, in cases where an FFP is used by an airline that is dominant in a market, the programme may represent a barrier to market entry as a result of travellers tending to join a programme that offers the highest number of departures and the largest network of routes. In some markets, this may lead to an absence of suitable bonus alternatives for the traveller. Alliances and other forms of collaboration – with airlines and other types of undertakings – tend to reinforce this market dominance, which in turn strengthens the entry barriers that FFPs represent.

3.3 FFPs in the Swedish market

In 1992, SAS introduced its EuroBonus scheme, one of the first FFPs in Europe. The Star Alliance network founded in 1997 gave SAS's EuroBonus members the opportunity to earn and use points throughout the alliance. In the same year, EuroBonus was also introduced in full in the domestic air travel market in Sweden. This SAS programme is totally dominant in the Scandinavian civil aviation market and also in the Swedish domestic market. EuroBonus has some 1.7 million members in Scandinavia and approx. 2.5 million altogether.

Other programmes, such as the British Airways Executive Club, KLM's Flying Dutchman, Lufthansa's Miles & More and Air France's Fréquence Plus, have only a few hundred thousand members between them in Scandinavia. At the beginning of 2003, Malmö Aviation introduced its own FFP, the Malmö Aviation Member Service.

3.3.1 EuroBonus⁵⁹

SAS EuroBonus is the dominant frequent flyer programme in the Swedish domestic market. Travellers, however, may use other FFPs in the Star Alliance when flying to SAS destinations, such as Lufthansa's Miles & More.

Bonus points

SAS EuroBonus has two types of points, Basic points and Extra points, which are earned in approximately the same way, via travel with SAS or one of its partners or via the purchase of other services or products from a partner. Both types of points can be used to claim free air travel, hotel accommodation or car rental, and both types of points are earned in approximately the same way. Basic points are used to calculate service levels. Extra points do not affect the member's status.

Bonus points in the SAS frequent flyer programme are valid for five years in the case of points used to claim trips, hotel accommodation and car rental. Points that determine level of membership are valid for a 12-month qualification period, dating from the month in which the member joined the scheme. Level of membership is determined by the number of Basic points that the member earns during this qualification period. As soon as members have earned the requisite number of points during this period, they are automatically upgraded to the next level of membership.

A member flying in economy class on the Stockholm-London route earns 1,200 points, for example, and in business class 2,400 points. An economy class trip on this route costs 30,000 points. On the Stockholm-Luleå route, and on several other domestic routes, members earn no points for free travel or the like but 600 points in economy class and 2,400 service points in business class. An economy class trip on this route costs 12,000 points.

⁵⁹ SAS's website.

Membership levels

SAS EuroBonus has three levels of membership – Basic, Silver and Gold. A member achieves Basic status on entering the programme. In Sweden, Silver status is achieved after 35,000 points and Gold after 100,000 points.

A Basic member enjoys such benefits as air travel without a paper ticket, discounts on hotel accommodation and car rental, and other special offers available exclusively to EuroBonus members. In addition, members earning enough points can exchange these for bonus travel and special offers. A further benefit is the option of acquiring a EuroBonus Diners Club card that can be used to earn additional points when purchasing and that also entitles members to travel insurance if they use the card to pay for the journey.

A Silver member is entitled both to the benefits enjoyed by a Basic member and to such privileges as a faster, simplified check-in, priority on waiting lists for fully booked SAS flights and special discounts on hotel accommodation and car rental, as well as other special offers. In addition, Silver members are allowed to take along an extra 10 kg of baggage free of charge on most SAS flights. Silver members who acquire a private EuroBonus Diners Club card also have access to Diners Club lounges at airports.

Gold is the highest level of membership in the EuroBonus scheme and is valid all over the world when flying with all the airlines and partners in Star Alliance. Besides all the privileges enjoyed by Silver members, Gold members have access to Star Alliance lounges at airports, top priority on waiting lists for fully-booked SAS flights and priority on other fully-booked flights with other Star Alliance airlines. In addition, they are guaranteed a seat on SAS flights, but not guaranteed a specific class, when booking a full-fare Business Class ticket at least 48 hours prior to departure. On flights between Stockholm and Göteborg, between Stockholm and Malmö, and inside Norway, Gold members are guaranteed a seat if they make a reservation at least 24 hours prior to departure. They also have access to a special reservation procedure for all classes on SAS European and Scandinavian flights. In addition, they have access to special Gold/First Class check-in facilities at the airports of Copenhagen, Göteborg, Oslo and Stockholm (Arlanda), and to Business Class check-in facilities at major Scandinavian airports. Gold members can check in the same day at

certain Radisson SAS Hotels & Resorts. In addition, they can take along an extra 20 kg of baggage free of charge on all SAS flights. They also have access to a large number of Star Alliance lounges around the world and can bring along a guest.

3.3.2 Braathen Wings

Up until 2002, Malmö Aviation, which was previously owned by Braathens, had an FFP entitled Braathens Wings. Following the acquisition of Braathens by SAS on 20 December 2001, Braathens' ownership was dissolved and Malmö Aviation became an independent airline. At the same time, Malmö Aviation discontinued its alliance partnership with KLM and others. After 2 April 2002, Braathens Wings and the SAS EuroBonus scheme were still two separate FFPs. But after that date, Malmö Aviation customers were given the opportunity to earn and redeem points on all of Malmö Aviation's, Braathens' and SAS's domestic and international routes. Points from the two programmes could not be pooled, either for redemption purposes or for the purpose of attaining a higher service level, but members were allowed to keep all the points they had earned. The SAS EuroBonus and Braathens Wings FFPs had similar rules for redeeming bonus trips.

In the autumn of 2002, Braathens and SAS agreed to operate only one FFP in the group and decided to terminate Braathens Wings as of 1 January 2003. This decision was due both to the Norwegian competition authority's refusal to permit bonus points systems on domestic flights in Norway and to SAS's acquisition of Braathens.

3.3.3 The Malmö Aviation Members Service⁶⁰

At the beginning of 2003, Malmö Aviation introduced its FFP, the Malmö Aviation Members Service. Travellers who had previously belonged to Braathens Wings and had flown with Malmö Aviation in 2001 and 2002 automatically became members of the new scheme.

⁶⁰ Malmö Aviations hemsida.

Bonus points

Points are earned on domestic Malmö Aviation flights, on international KLM flights and through the purchase of other services or products from partners. At present, the partners are Flygtaxi and Elite Hotels. Points earned can be redeemed against Malmö Aviation or KLM air travel, or against purchases from their partners.

A one-way flight with Malmö Aviation at a regular price gives members 1,200 points, while discount travel yields 600-900 points, depending on the ticket price. When bonus points are redeemed, a one-way flight with Malmö Aviation costs 6,000 points. Certain campaign prices, youth fares and the like do not entitle the traveller to any points.

Membership levels

The Malmö Aviation Members Service has two card levels, Basic and Gold. The level is determined by the number of Malmö Aviation flights undertaken on a normal ticket or by the number of points earned during a calendar year. Members attain Gold status by undertaking 20 one-way trips with Malmö Aviation on a normal ticket or by earning 24,000 points from Malmö Aviation flights undertaken in a single calendar year. Those who were members of the Braathens Wings programme and have undertaken 10 return trips on a normal ticket with Malmö Aviation or have earned at least 20,000 bonus points on domestic travel with Malmö Aviation in 2001 and 2002 are accorded Gold status in the Malmö Aviation Members Service programme.

Besides the privileges enjoyed by Basic members, Gold members have access to a number of benefits, including free coach travel to and from airports, an extra 20 kg of baggage free of charge, priority on waiting lists for fully-booked Malmö Aviation flights and special discounts at Elite Hotels. In addition, Gold members can take along an extra 10 kg of baggage free of charge on all KLM flights. Gold status is valid for 12 months. Gold members also enjoy a range of benefits relating to bonus travel, such as the right to book bonus trips on the day of departure, the right to give away bonus trips to another person of their choosing, the right to change bonus travel bookings free of charge, the right to take 'standby'

trips on bonus tickets, and a 50 per cent discount on bonus travel for children under 18.

3.4 Comparisons with Europe and the US⁶¹

The European civil aviation market is mainly dominated by four frequent flyer programmes – British Airways' Executive Club, KLM's Flying Dutchman, Lufthansa's Miles & More and Air France's Fréquence Plus. Miles & More, which has over 6 million members, is the largest FFP in Europe. Figure 10 shows a selection of the major frequent flyer programmes in Europe and the US.

Figure 10 The largest frequent flyer programmes in Europe and the US

	Airline	FFP	Members worldwide	Members Scandinavia	Alliances
<i>Europe</i>	Lufthansa	Miles & More	6 million	90 000	Star Alliance
	Air France	Fréquence Plus	5 million	22 000	Skyteam
	British Airways	Executive Club	4.5 million	120 000	Oneworld
	SAS	EuroBonus	2.5 million	1.7 million	Star Alliance
	KLM	Flying Dutchman	1.7 million	140 000	WorldPerks
<i>US</i>	American Airlines	Aadvantage	43 million		Oneworld
	United Airlines	Mileage Plus	40 million		Star Alliance
	Delta Airlines	SkyMiles	29 million		Skyteam
	US Airways	Dividend Miles	21 million		-
	Northwest Airlines	WorldPerks	20 million		WorldPerks

Source: Travel News 6, 2002, and the website of each respective airline.

The four major European FFPs display numerous similarities, both with one another and with the Swedish programmes. All the programmes have service levels with similar benefits for travellers. Bonus points are principally earned in the same way in all. Points can be earned and redeemed both from the airline concerned and within the alliance it belongs to, as well as from the airline's partners in the hotel, car rental, finance and service industries.

All FFPs have an entry level that has to be reached before bonus points can be used. All the programmes except KLM's Flying Dutchman have a basic requirement whereby travellers must fly

⁶¹ The data in this section is taken from the websites of KLM, British Airways, Air France, United Airlines, Northwest Airlines and American Airlines.

with the airline concerned during a three-year period if they wish their points to remain valid. By comparison, points are valid for five years under the SAS EuroBonus scheme.

In Air France's Fréquence Plus programme, however, members only need to use their Air France American Express cards for their points to remain valid during the three-year period. Bonus points earned under the Flying Dutchman scheme are valid for life. In Lufthansa's Miles & More programme, bonus points earned by Silver and Gold members are also valid for life.

A distinguishing feature of the Flying Dutchman programme is that under certain circumstances bonus points can be inherited and that members are allowed to combine their points with cash in order to reach a level entitling them to a benefit. Under British Airways' Executive Club scheme, bonus points can under certain circumstances be used to pay for travel by someone other than the member.

The terms of membership for each of the FFPs operated by British Airways, Air France and KLM make clear that free trips claimed under the schemes are taxable. The members themselves pay all taxes due as a result of membership or as a result of claiming benefits under the programmes. The terms of membership of the Executive Club state that the airline will supply all details concerning the member to the tax authorities if requested to do so by the latter. In the case of Fréquence Plus, members are responsible for ensuring that the third party paying for the ticket, e.g. the employer, is given information about bonus points earned and any other benefits claimed under the programme. There are no provisions concerning taxation in the Miles & More scheme.

All airlines reserve extensive rights to alter the terms of membership in their FFPs or to terminate them. British Airways, for instance, reserves the right to change Executive Club membership agreements and terms of membership at any time. Under its agreements, the airline also has the right to refuse anyone membership and also retains right of ownership to cards and reserves the right to demand their return. Moreover, restrictions may be imposed for certain member groups. In addition, six months' notice of termination may be issued for the programme, and earned points that are not used within that period are no longer valid. Regarding bonus points, the airline reserves the right to

change the rules for how they are earned, e.g. with which airline, for which regions and in which cabin or reservation class the points may be earned and redeemed.

The Flying Dutchman scheme has similar rules for termination of the programme, while points earned in the Fréquence Plus programme are valid even if the programme is discontinued. In the Miles & More programme, points earned remain valid for the prescribed period if the member terminates his/her agreement with the company, and for six months if Lufthansa terminates the agreement.

Both KLM and British Airways reserve the right to pass on all information concerning a member to all their business partners for marketing purposes. Lufthansa, too, has a similar provision.

Under most of the FFPs, it is the member who earns the points regardless of who pays for the ticket. Members are required to inform their employer when expecting to earn points for services paid for by the employer.

Among US airlines, there are 15-odd frequent flyer programmes and these have over 70 million members in the US, of which almost a third are active. All the major airlines have programmes of a similar nature. The largest FFP is Aadvantage, with 43 million members worldwide.⁶²

In contrast to Europe, there is a clear tendency in the US to treat bonus points as a form of currency. While all FFP agreements stipulate that members can neither sell, purchase nor exchange bonus points, a second-hand market nevertheless exists. Under the Aadvantage programme, for instance, members have a limited right to buy points in order to reach a desired benefit level and they are also entitled to give away points. The question of introducing tax on bonus benefits has been discussed in the US.

⁶² Travel News, 6 June 2001

3.5 Summary of conclusions

Frequent flyer programmes are an important competitive instrument designed to induce loyalty. An airline with a large network and a wide range of products can offer an attractive FFP that strengthens customer loyalty to the company. Alliances and other partnerships strengthen loyalty further.

FFPs differs from other loyalty programmes, particularly in terms of their structure and their rewards. FFPs have a sophisticated points system. In addition, they include entry levels or thresholds, time and membership limits, and 'blackout periods', and the airlines also reserve the right to modify their programmes or terminate them. Also, FFP benefits take the form not of cash but of free services. When entry levels are factored in, this use of non-monetary benefits makes it difficult to calculate and evaluate the size of the reward in relation to the total purchase value. Another difference compared to most other loyalty programmes is in the size of the reward in relation to total purchase value. Also, FFPs differ in that each member's total purchase value, especially in the business travel segment, is relatively high. Furthermore, FFPs target business travellers. A characteristic feature of these programmes is that travellers in this category do not pay for their journeys themselves as they are flying on business.

Most of the major airlines in the world offer an FFP of some kind. The SAS programme, EuroBonus, is one of the most extensive in Europe and easily dominates the domestic civil aviation market in Sweden. In structure, most FFPs have more or less the same characteristics, whether they are Swedish, European or American. There are certain differences between the programmes, however, principally with regard to the validity of bonus points. In most programmes, bonus points are valid for 3-5 years while in some they are valid for life. In addition, there are a number of minor differences concerning such aspects as the way points are earned and redeemed, the right of airlines to make changes in their programmes and the right of airlines to use information about their members.

4 Legislation and practice

- Although no legislation dealing specifically with frequent flyer programmes is currently in force, related issues are addressed in tax, competition and consumer affairs legislation.
- Air traffic is safeguarded at international and national level by a complex, extensive body of regulations.
- In a ruling issued on 27 February, 2001, the Swedish Market Court banned SAS from operating its frequent flyer programme in such a way that bonus points could be earned on domestic flights on routes where SAS – or another airline cooperating in an alliance with SAS under the programme – was in competition with other carriers.

4.1 Legislation

Part of the Swedish Competition Authority's brief is to identify legislation that has a bearing on the presence and application of airline-operated bonus programmes (frequent flyer programmes, FFPs). The present chapter opens with an account of the regulations governing air services, in view of their importance to competition in the aviation sector. This is followed by a discussion of relevant tax, competition and consumer legislation with a bearing on bonus programmes.

4.1.1 Air services⁶³

The Chicago Convention

The fundamental and legal regulatory framework for civil aviation was laid down in the International Convention on Civil Aviation of 1944, also known as the Chicago Convention. One of the key principles of this agreement is that every contracting state has complete and exclusive sovereignty over the airspace above its territory. No scheduled international air service may be operated over or into the territory of a contracting state except with the special permission or authorisation of that state. This precept underlies the system of bilateral aviation agreements which has developed over the years. Under the terms of the International Air Services Transit Agreement, signed at the same time as the Chicago Convention, each contracting state grants to the other contracting states the following freedoms of the air in respect of scheduled international air services: 1) the privilege to fly across its territory without landing, and 2) the privilege to land for non-traffic purposes.

The global perspective

Scheduled air services to or from countries outside the EU may still not be operated without permission or other authorisation from the state whose airspace is involved.

Market access is regulated by bilateral agreements between contracting states. Agreements normally involve exchange of the first four so-called freedoms of the air.⁶⁴ The fifth freedom⁶⁵ is seldom embodied explicitly in such agreements and the consent of

⁶³ The contents of the present chapter are mainly the responsibility of the Swedish Civil Aviation Administration.

⁶⁴ (1) The privilege to fly across the territory of another contracting state without landing, (2) the privilege to land in the territory of another contracting state for non-traffic purposes, i.e. to make 'technical' landings, e.g. for purposes of refuelling, taking on/putting down passengers, cargo or mail, (3) the privilege to put down passengers, mail and cargo taken on in the territory of the state whose nationality the aircraft possesses, (4) the privilege to take on passengers, mail and cargo destined for the territory of the state whose nationality the aircraft possesses.

⁶⁵ The privilege to take on passengers, mail and cargo destined for the territory of any other contracting state and the privilege to put down passengers, mail and cargo coming from any such territory.

third countries is assumed. Sweden has entered into bilateral agreements with approximately 90 countries outside the EU.

According to new common policy guidelines drawn up as part of the joint development of Scandinavian aviation policy, SAS should retain its preferential right to operate flights which are subject to restrictive contract conditions. If SAS does not exercise this right, i.e. refrains from operating flights between Scandinavia and another country, other airlines are free to establish their own routes.⁶⁶

Although the European Commission does not yet enjoy exclusive powers to conclude civil aviation agreements with third countries on the European Community's behalf, it has been given a mandate to negotiate the creation of a Trans-Atlantic Common Aviation Area with the US on behalf of the EU. This mandate does not yet extend to negotiations aimed at securing market access. The common aviation area talks with the US came to a standstill partly because the Commission took a number of member states, including Sweden, to the EC Court of Justice for having entered into an 'open skies' agreement with the US.

In judgements⁶⁷ handed down on 5 November 2002, the Court of Justice noted that member states' open skies agreements involved commitments that conflicted with their obligations towards the EU on three counts.

Not only were agreements in breach of the existing Council Regulation on airfares and rates to be applied by US carriers when operating routes in the EU,⁶⁸ they also contravened the Regulation on computerised reservation systems forming part of the systems on offer or in use inside the Community.⁶⁹ Moreover, the provisions in the agreements relating to airline ownership and control – the so-called nationality clauses – conflicted with the freedom of

⁶⁶ Swedish government bill 1996/97:126. The guidelines state that Scandinavian aviation policy should adopt a liberal approach in which account is taken of consumer and competition concerns and SAS can pursue its operations on a commercial basis. Scandinavian countries should accordingly seek to establish liberalised aviation markets with as many countries as possible, either through liberal agreements, open skies agreements or multilateral aviation agreements.

⁶⁷ See Case against Sweden, C-468/98.

⁶⁸ OJ L 240, 24 August 2002.

⁶⁹ OJ L 278, 29 July 1989.

establishment of Community nationals. The Court of Justice also held that the clause discriminated against other carriers in the EU and prevented them from being treated as domestic legal entities.

The ruling nevertheless acknowledges the right of member countries to negotiate aviation agreements with non-Community countries with the exception of those areas where the Community has been invested with exclusive powers to enter into commitments on behalf of its members. Agreements must also respect the freedom of establishment within the Community. Carriers from third countries thus have access to routes within the single market in competition with EU registered carriers.

The EU has recently concluded an aviation agreement with Switzerland. As a result, Community legislation will – in principle – become applicable to Switzerland, while Swiss air carriers will gradually gain access to the aviation market inside the Community.

A requirement associated with international harmonisation is the liberalisation of market access. One example is the integration of a number of Central and East European states, the PECOS states, into the EU single aviation market.

Community measures in the aviation sector

Swedish aviation is materially affected by EU legislative instruments in the aviation field. Community policy is aimed at liberalising and harmonising aviation within the EU and strengthening competition. Among the legal measures introduced by the European Council is Council Regulation (EEC) No. 2407/92⁷⁰ on the licensing of air carriers. All carriers engaged in certain types of commercial aviation within the EU are required to conduct their operations in an economically sound manner, maintain high levels of safety and be adequately insured.

Council Regulation (EEC) No. 2408/92⁷¹ on access for Community air carriers to intra-Community air routes, permits Community air carriers to exercise air traffic rights on all civil aviation routes within

⁷⁰ OJ L 240, 24 August 1992.

⁷¹ OJ L 240, 24 August 1992.

the Community, subject to certain restrictions set out in the regulation. Thus under the regulation, a member state may, without discrimination on grounds of nationality of ownership and air carrier identity, whether incumbent or applicant on the routes concerned, regulate access to routes within its territory for air carriers licensed by it in accordance with Regulation (EEC) No. 2407/92 while otherwise not prejudging Community law and, in particular, competition rules.

When serious congestion and/or environmental problems exist, the member state responsible may impose conditions on, limit or refuse the exercise of traffic rights, in particular when other modes of transport can provide satisfactory levels of service. Action taken by a member state in accordance with this regulation must not unduly affect its objectives, unduly distort competition between air carriers or be more restrictive than necessary to relieve the problems. Under the regulation, member states may also impose a public service obligation in respect of scheduled air services.

In principle, Community air carriers are free to set air fares at whatever level they choose. Council Regulation (EEC) No. 2409/92⁷² on fares and rates for air services is vital to the ability of member states to follow market developments, particularly with respect to air fares. Responsibility for applying the regulation in Sweden rests with the Civil Aviation Administration (*Luftfartsverket*). In addition to limited powers to gather and compile data on fares and rates, the agency is empowered under the above regulation to impose price regulating measures aimed at air carriers that underprice or overprice their services.⁷³

⁷² OJ L 240, 24 August 2002.

⁷³ Report from the Swedish CAA, 'Market Conditions in Domestic Aviation' (*Inrikesflygets marknadsförutsättningar – Luftfart och Samhälle Rapport 2001:6*). The Swedish CAA considers that it is responsible for protecting the interests of consumers and ensuring that air carriers comply with rules designed to prevent the restriction of free competition in a deregulated market. The agency further considers that under the terms of the Council regulation on fares and rates for air services it may decide at any time to:

- a) rescind a basic fare which, in the context of the carrier's overall price structure as well as other relevant factors, including competitive conditions in the market, is detrimentally high – from the customer's viewpoint – in relation to the carrier's long-term, fully distributed relevant costs, including an adequate return on capital.
- b) arrest further price falls in a market – whether a single carrier or a network is involved – where market forces have precipitated a prolonged downward price trend.

In addition to the three regulations referred to above, the Council has adopted Council Regulation (EEC) No. 95/93⁷⁴ on common rules for the allocation of slots at Community airports. The regulation is currently the subject of a review aimed *inter alia* at improving access by new entrant airlines to attractive slots at hub airports.

Council Regulation (EEC) No. 2299/89 on a code of conduct for computerised reservation systems, issued on 24 July 1989,⁷⁵ amended by Council Regulation (EEC) No. 3089/93, issued on 29 October 1993,⁷⁶ and by Council Regulation (EEC) No. 323/1999, issued on 8 February 1999,⁷⁷ is of significance for aviation market players.

Other important regulations in this connection are Council Regulation (EEC) No. 3975/87 of 14 December 1987 laying down the procedure for the application of the rules on competition to undertakings in the air transport sector,⁷⁸ amended by Council Regulation (EEC) No. 1284/91 of 14 May 1991⁷⁹ and Council Regulation (EEC) No. 2410/92 of 23 July 1992.⁸⁰

The Commission has adopted a proposal on the regulation of alliances between airlines in and outside the EU. Regulatory measures, which will enable the Commission to inquire into competition-related matters arising in connection with air transport between the EU and third countries, are expected to take effect on 1 May 2004.⁸¹

Swedish provisions

Swedish aviation legislation is largely determined by the international commitments which Sweden has entered into. The principal instruments in this sphere are the Aviation Act

⁷⁴ OJ L 14, 22 January 1993.

⁷⁵ OJ L 278, 29 July 1989.

⁷⁶ OJ L 278, 11 November 1993.

⁷⁷ OJ L 040, 13 February 1999.

⁷⁸ OJ L 374, 31 December 1987.

⁷⁹ OJ L 122, 17 May 1991.

⁸⁰ OJ L 240, 24 August 1992.

⁸¹ IP/03/284, 26 February 2003.

(*Luftfartslagen* – 1957:297) and the Aviation Ordinance (*Luftfartsförordningen* – 1986:171).

Under the former, the right to operate air services over Swedish territory only extends to EEA-based carriers⁸² or to carriers outside the EEA with which Sweden has entered into agreements permitting air transport over Swedish territory.

The Aviation Ordinance contains provisions governing the application of the Aviation Act. In addition, the Swedish CAA draws up regulations in accordance with the terms of the ordinance, often in implementation of Sweden's international commitments, e.g. the annexes to the Chicago Convention and various EU directives. Some of the regulations have been brought together in a series entitled Civil Aviation Provisions (*Bestämmelser för Civil Luftfart – BCL*), while others now form part of the Joint Aviation Provisions (*Gemensamma Luftfartsbestämmelser – JAR*) series.⁸³ Some appear in other collections. The agency also issues guidances in this area. While regulations are binding, guidances contain general recommendations on how a regulation can or should be applied. Regulations and guidances are promulgated in the Civil Aviation Administration's Code of Statutes (*Luftfartsverkets författningssamling – LFS*).

The agency's own standing instructions state that the Civil Aviation Administration is a central administrative authority with overall, sectoral responsibility for civil aviation in Sweden. The agency must actively promote efforts to achieve Sweden's transport policy goals. Its duties include contributing to the fulfilment of established sub-goals including accessible, high-quality, safe, gender-equal transport systems, a good environment and favourable regional development. Its principal tasks are to:

- promote the development of civil aviation,
- be responsible for the operation and development of state-owned civil aviation airports,

⁸² Before Sweden's accession to the EU, this right was restricted to Swedish carriers.

⁸³ Joint Aviation Requirements.

- supervise activities aimed at ensuring air safety in the civil aviation sector,
- be responsible for protecting the environment from civil air traffic pollution,
- be responsible for peacetime air services in civil and military aviation,
- carry out emergency planning for civil air transport, and
- seek to ensure that the needs of disabled people are taken into account in the civil aviation sector.

Thus the agency performs two basic functions. As a 'producer authority' it directs the operation and development of state-owned airports and air traffic services. In its capacity as a supervisory authority, it is ultimately responsible for monitoring compliance with civil aviation safety standards on the one hand and for implementation of legislative measures and government transport policy for the aviation sector as a whole on the other.

The agency is also the authority responsible for implementation of central EC provisions in the aviation sphere. It is thus directly concerned with the implementation of Community regulations on carrier licensing, market access, fares and arrival and departure times.

4.1.2 Consumer affairs⁸⁴

The Marketing Practices Act (*Marknadsföringslagen, MFL* – 1995:450), stipulates that marketing operations shall be consistent with generally accepted marketing practices and shall otherwise be fair with respect to consumers and traders (business enterprises). It further states that when conducting marketing operations, traders shall provide information of particular importance to the consumer.

⁸⁴ The contents of this section are largely the responsibility of the Swedish Consumer Agency.

A trader may not in the course of marketing make any assertion or other representation which is misleading with respect to his/her enterprise or any other business undertaking. This applies particularly to assertions or representations relating to the price of the product being marketed, the basis of the trader's pricing policy and terms and conditions of payment. If a trader in the course of marketing offers a purchaser additional products free of charge or at a special, reduced price, or offers a purchaser special benefits, it must ensure that the purchaser is clearly informed with regard to the terms and conditions attached to the offer, the specific nature and value of the offer and any time limits or other restrictions which may be applicable.

Under the Price Information Act⁸⁵ (*Prisinformationslagen, PIL*) prices of all goods and services must be clearly and correctly displayed. Prices must be shown in writing if the consumer cannot obtain adequate price information by other means. Prices as stated must be inclusive of value-added tax and/or any other taxes which may be applicable. Where additional charges, fees or other costs are payable this must be clearly stated. Failure to provide price information in accordance with this act shall be dealt with under Section 4 of the Marketing Practices Act concerning information of particular importance to the consumer.

The Consumer Contract Terms Act⁸⁶ (*Lagen om avtalsvillkor i konsumentförhållanden*) governs contract terms applied by traders in connection with goods, services or other benefits offered to consumers.⁸⁷ If the terms (price or other conditions) of a contract are unreasonable, i.e. exclusively benefit the seller at the expense of the consumer, the Market Court may prohibit the trader from applying the same or basically similar terms in the future provided such a ban is in the general public interest or is otherwise in the interests of the consumer or competitors. A ban shall normally be accompanied by a fine.

⁸⁵ 1991:601.

⁸⁶ 1994:1512.

⁸⁷ A consumer is defined in the same way in the Price Information Act and the Marketing Practices Act.

The Consumer Services Act⁸⁸ (*Konsumenttjänstlagen, KtjL*) deals with defects, shortcomings or delays in connection with the purchase of services. Transport does not fall within the scope of the act, but is governed by transport law, which is largely based on international conventions.

The Terms of Contract between Traders Act⁸⁹ (*Lagen om avtalsvillkor mellan näringsidkare*) governs contract terms and conditions applied by a trader when entering or intending to enter into an agreement with another trader. If a contract term or condition is found to be unreasonable, the Market Court may prohibit the trader from applying the same or basically similar conditions in the future, provided such a ban is in the general public interest. Particular consideration must be given to the need to protect the interests of the weaker party to a contract when deciding whether a term or condition is to be regarded as unreasonable. A ban shall be accompanied by a fine unless deemed unnecessary on special grounds.

The Swedish Consumer Agency

The Swedish Consumer Agency (*Konsumentverket*) is a central administrative authority with responsibility for consumer affairs and the implementation of government policies for consumers. The agency's overall objectives, as laid down in its instructions, are to strengthen the position and influence of consumers in the market, to help households make effective use of their financial and other resources, to protect the health and safety of consumers, to promote production and consumption patterns that contribute to long-term, sustainable development, and to help ensure that consumers have access to advice, information and education of an adequate standard.

The agency is required to focus particularly on measures relating to basic household consumption, support for consumer groups which are socially or economically vulnerable or in need of special support

⁸⁸ 1985:716.

⁸⁹ 1984:292.

for other reasons, and to promote consumer interests within the framework of international cooperation.⁹⁰

Its tasks include monitoring compliance with existing marketing legislation such as the Market Practices Act, the Price Information Act and the Consumer Contract Terms Act. A consumer is defined under the Consumer Sales Act⁹¹ (*Konsumentköplagen*) and the last two acts above as a natural person acting mainly for purposes which are not related to his/her trade, business or profession. Thus a traveller flying on bonus points earned from business journeys paid for by his/her employer is not regarded as a consumer in the sense intended by the legislators of Sweden's consumer protection laws.

A number of complaints relating to FFPs have been filed with the agency in recent years. Two of these⁹² were mainly concerned to establish whether Malmö Aviation was guilty of misleading marketing practices by claiming in its promotional material that it was now the only company offering customers bonus points. No action has been taken by the agency in response to these complaints. Another complaint concerning misleading information about EuroBonus points⁹³ was referred for settlement to the National Board for Consumer Complaints.

The Market Court

The Market Court handles cases and matters coming within the purview of the Competition Act (*Konkurrenslagen, KL – 1993:20*), the Marketing Practices Act, the Consumer Contract Terms Act, the Terms of Contract between Traders Act and the Price Information

⁹⁰ Sections 1 and 2 of Ordinance 1995:868 setting out instructions for the Swedish Consumer Agency.

⁹¹ The Consumer Sales Act was amended on 1 July 2002 (1990:932) to bring it into line with the Consumer Sales Directive, EC Directive 1999/44/EC on certain aspects of the sale of consumer goods and associated guarantees, which was to be implemented in the member states. See Govt Bill 2001/02:134.

⁹² Ref. No. 2001/5175 and Ref. No. 2001/4928.

⁹³ Ref. No. 2002/2641.

Act.⁹⁴ The acts specify who may file cases with the Market Court. Private individuals may not do so.⁹⁵

Practice

In its ruling in the Consumer Ombudsman v Collect Sweden AB case (MD 1999:24), the Market Court stated that to give private consumers the impression in direct mail campaigns that they would be enrolled in a bonus system unless they expressly declined the offer constituted improper practice under the terms of the Marketing Practices Act. Failure to inform potential consumers of the value of earned bonus points using clear price examples was also considered unfair practice in light of the provisions on consumer information in the same act. A further instance of improper practice was the failure to indicate who was responsible for the marketing campaign in the relevant advertisements.

In another ruling (MD 2000:9) the Market Court declared that marketing special-line articles and promotional items constituted improper practice under Section 4 of the Marketing Practices Act. In a marketing campaign aimed at other businesses, the company in question announced that purchasers of special-line articles and promotional items would receive prizes in the form of other products. Brochures advertising this had been mailed to corporate communications officers and it was a reasonable assumption that the message had also reached personnel in the companies' purchasing departments. The Market Court conceded that the nature of the products and their price were such that – in the case of smaller companies, at any rate – the decision to buy was often referred to or usually made directly by the owner. However, since it was possible to envisage cases where such purchases might be approved by purchasing officers, there was a manifest risk that the prizes on offer would be seen as an inducement, and the Court therefore declared the practice to be unfair.

⁹⁴ The Price Information Act is an annex to the Marketing Practices Act. Thus sanctions for contravening provisions on marketing practices in the former are imposed with specific reference to Section 4 of the Marketing Practices Act.

⁹⁵ The Market Court Act (*Lag om marknadsdomstol* – 1970:417).

4.1.3 Taxation⁹⁶

Between 1992 and 1997, loyalty discounts awarded on international flights were exempt from tax.⁹⁷ The main reason for this was the virtual impossibility of taxing discounts offered by foreign companies. SAS had pointed out to the Riksdag (parliamentary) Committee on Taxation (*Skatteutskottet*) that if the company was to remain competitive it had to operate some form of discount programme. Unless it could do so it risked losing a significant proportion of its customer base and thereby jeopardising its operation. SAS further maintained that its discounts must be tax free. Declaring discounts to the tax authorities would cause considerable problems and there was a significant risk that customers would opt for foreign airlines whose discount programmes were not subject to scrutiny by their countries' tax authorities. The Council on Legislation reminded SAS that the then newly implemented tax reform was aimed at ensuring uniform taxation of earned income and that certain former tax-free benefits were subject to tax under the new system. After considering whether and to what extent the proposed discounts might be in breach of the provisions of the Penal Code (*Brottsbalken*) on bribery, and examining the norms set out in the Marketing Practices Act, the Council concluded that frequent flyer bonus systems should be designed and implemented so that companies did not overstep the boundary between fair and unfair practice.

The Council further maintained that it would not normally be possible to object to procedures involving employers either drawing benefits initially themselves and passing them on to their employees in their capacity as travellers, or being involved in such a way that they might reasonably be regarded as having transferred said benefits to their employees.

The majority of the members of the parliamentary Committee on Taxation considered it was vital that Swedish airlines should be free

⁹⁶ The contents of this section are mainly the responsibility of the National Tax Board (*Riksskatteverket*).

⁹⁷ The provision was set out in Section 32 (f) of the now repealed Local Government Tax Act (*Kommunalskattelagen* – 1928:370): “Though not specifically provided in 3 (d), discounts or similar benefits awarded by carriers in return for customer loyalty on international flights in accordance with internationally accepted practice, and which ultimately go to an employee or contractor in his/her capacity as traveller, are not subject to taxation.”

to operate under competitively neutral conditions and offer discounts on the same terms as other airlines. It could not therefore accept a situation in which discounts offered by a Swedish airline were taxed while corresponding benefits from foreign carriers went untaxed. Seven members of the committee entered reservations to the proposed tax exemption, arguing that the committee's proposal could be seen as sanctioning a business ethic conducive to bribery and subornation, and encouraging improper practices under the terms of the Marketing Practices Act and competition laws. The Riksdag subsequently approved the committee's proposal to exempt loyalty discounts from tax.⁹⁸

In a bill introduced in 1995 (1995/96:152), the Government proposed that the tax exemption for loyalty discounts introduced in 1992 should be rescinded as of 1998 (tax assessment year). The Government stated in the bill that FFPs were unlikely to be of major significance to companies that purchase business trips as the bonuses seldom benefited them directly. Larger enterprises are said to receive volume discounts and it is in their interests to travel with carriers with which they have agreements. In the Government's view, the competition reasons advanced by SAS had probably become less compelling since the exemption was originally made. The Government also objected to the way in which discounts were awarded in practice.

In a subsequent bill introduced in 1996 (1996/97:19) the Government declared with reference to tax verification data (income statements) that discounts, bonus points or other benefits awarded to an employer for purchasing business trips properly belonged to that employer.⁹⁹ Under the Government's proposal, which was duly adopted and implemented, employers would be required to submit verification data, pay social insurance contributions and make appropriate tax deductions. In addition, travellers would be required to provide their employer with evidence in writing of their bonus status and/or benefits received.

⁹⁸ See also Govt Bill 1995/96:152, pp. 54-55. The Government proposed (pp 56-58) that the tax exemption on loyalty discounts introduced in 1992 should be rescinded from 1998 (tax assessment year, i.e. income year 1997).

⁹⁹ In comments to the proposed legislation, SAS stated that travellers were continuously informed of their earned and used bonus points and that travellers were required to actively contribute to the bonus scheme by stating their membership numbers when booking a flight or checking in.

Frequent flyer programmes become a tax matter when air tickets used for business purposes by employees or contractors are paid for by their employers or principals/clients or when tickets are used for business purposes by self-employed persons or by joint owners of a trading company, and the bonus points accruing therefrom are used by the above for private travel. Benefits are not taxable if bonus points were acquired in the course of private travel. Loyalty discounts do not become liable for tax until they are actually used.

The private use of bonus points by an employee or contractor who is not a trader constitutes a benefit derived from his/her service, employment or contract.¹⁰⁰ In the case of sole traders or owners of trading companies, it is treated as a withdrawal from the business.¹⁰¹

As regards earned income, the key rule in the Income Tax Act (*Inkomstskattelagen*)¹⁰² is that wages, fees, compensation for expenses, pensions, benefits and other forms of earned income must be declared as receipts.¹⁰³ To be taxable, a benefit need not be received directly from an employer. A causal relationship is sufficient, i.e. a benefit or equivalent is taxable if it is awarded in connection with a person's employment, trade or profession.

With regard to the provisions governing the valuation of benefits in other than money terms, the basic rule is that benefits must be assessed at their current market value.¹⁰⁴ This is defined as the price a person would have paid in his/her own locality if he/she had acquired an equivalent benefit for cash.¹⁰⁵ The provisions governing withdrawals from a business state that a withdrawal of an asset or

¹⁰⁰ For the purposes of the present report, the terms 'employee' and 'employer' are used if the former receives an earned income irrespective of the formal, i.e. legal status of his/her job.

¹⁰¹ The term 'trader' will also be used to refer to part owners of trading companies.

¹⁰² Chapter 11, section 1 of the Income Tax Act (*Inkomstskattelagen, IL – 1999:1229*).

¹⁰³ Earned income is defined as income derived from employment, contractual services or other income-generating activity of a permanent or temporary character.

¹⁰⁴ Chapter 61, Section 2 of the Income Tax Act.

¹⁰⁵ Special rules on travel benefits subject to restrictive terms are set out in Chapter 61, Sections 12-14. These do not have general application, however, but are limited to people employed or specially contracted in the travel and transport industry.

service must be treated as if it had been sold for an amount corresponding to its market value.¹⁰⁶

Under the Tax Return and Income Statement Act (*Lagen om självdeklarerationer och kontrolluppgifter*, LSK – 2001:1227), an employer is bound to inform the tax authorities if an employee has received a customer loyalty discount, bonus or other benefit awarded on the basis of outlays by the former.¹⁰⁷ The act further states that a person who has claimed such a discount, bonus or benefit must supply his/her employer with such information as the latter may require to comply with the first provision. This information must be made available within a month of redeeming the benefit.¹⁰⁸

The Social Insurance Contributions Act (*Socialavgiftslagen* – 2000:980) states that an employer is required to pay social insurance contributions on wages and other remuneration for work.¹⁰⁹ Thus airlines are required to pay employer's contributions when bonus points earned by employees on business trips are redeemed. However, this rule does not apply to remuneration in the form of discounts, bonuses or other premiums awarded for customer loyalty.¹¹⁰ In such cases, social insurance contributions must instead be met by the person or entity that has ultimately borne the costs of the fares or other purchases on which the discounts, bonuses or premiums are based, i.e. the employer. Withdrawal by a trader of an asset from his/her business is equivalent to an increase in income, on which personal social insurance contributions are payable.

Penalties

Employers, employees or, in the case of businesses, traders who fail to disclose redemption of bonus points may be penalised, either by administrative sanction in the form of a tax surcharge in the case of an infringement of the tax laws, or by appropriate penalties in cases involving serious violation of the tax laws. The latter applies only to private individuals, not to companies.

¹⁰⁶ Chapter 22, Section 7 of the Income Tax Act.

¹⁰⁷ Chapter 6, Section 3.

¹⁰⁸ Chapter 15, Section 4 and 5.

¹⁰⁹ Chapter 2, Section 1.

¹¹⁰ Chapter 2, Section 2.

The penalty for supplying the tax authorities with false information is a tax surcharge. In the case of income tax, the surcharge is normally fixed at 40 per cent of the tax which the person would have been liable for if the false information had been accepted.¹¹¹ A surcharge may be imposed on the employer and employee for the same omission.

Under the Tax Offences Act (*Skattebrottslagen* – 1971:69)¹¹² anyone found guilty of knowingly supplying false or misleading information to a person responsible for withholding tax for the former or liable to submit verification data or equivalent information to the tax authorities shall be sentenced to a fine or imprisonment for a maximum period of six months if the said information bore on factors relating to the discharge of that person's liability in the above respect or to his/her liability to pay taxes. If the action was committed through carelessness, the offender may be sentenced to a fine or imprisonment for a maximum of six months for the offence of negligent tax accounting.

Practice

On 8 February 2002,¹¹³ the local tax authority ordered SAS to furnish information regarding the purchase of travel tickets by a certain person. The airline was required on penalty of a fine of SEK 100,000 to state within 10 days whether tickets had been purchased by that person and to supply details of travel dates, destinations and whether any tickets had been returned unused. When SAS failed to

¹¹¹ Chapter 5, Section 1 of the Tax Assessment Act (*Taxeringslagen* – 1990:324), cf Chapter 15, Section 1 of the Tax Payment Act (*Skattebetalningslag* – 1997:483).

¹¹² Sections 7 and 8.

¹¹³ Chapter 3, Section 50 a of the Tax Return and Income Statement Act. Under Chapter 17, Section 4 of the act, the tax authority may require a person who has, or is presumed to have, the obligation to keep tax records under the Accounting Act (*Bokföringslagen* – 1999:1078) or a legal entity other than the estate of a deceased person, to furnish information relating to a legal transaction between her/him and another person, or to produce a legal document, or to supply a copy of a legal document relating to a legal transaction. The said requirement must concern matters relating to the tax authority's ability to verify that the obligation to submit a tax return or other obligation to furnish information are fully and correctly fulfilled by persons other than those required to do so, or that the obligation to furnish information under the above act *can* be fulfilled by persons other than those required to do so. Under Chapter 17, Section 8, a fine may be imposed if there are grounds for assuming that the requirement has not been complied with. However, fines may not be levied on central government bodies, county councils, municipal councils or public officials. The court may also pronounce on the suitability of a fine when considering a request for its application.

provide the requisite information, the tax authority applied to the County Court for an injunction.

The tax authority referred particularly to SAS's ability to identify the person in question through the airline's register of EuroBonus cardholders. SAS pleaded inability to comply with the injunction and asked that the tax authority's application be rejected. The airline claimed that as no record was kept of the identity of its passengers it was unable to carry out the tax authority's instruction. However, the County Court took the view that SAS was in fact able to comply and ordered that the fine be paid.¹¹⁴ The court's decision was appealed but as the higher court refused to issue a review permit, the ruling entered into force.

Although the case does not bear directly on the acquisition of frequent flyer bonus points, the tax authority's request was not wholly unrelated. Under the terms of the Tax Return and Income Statement Act, a tax authority could conceivably request an airline to furnish information about a person's outstanding or expended frequent flyer bonus points.

In sum, bonus points redeemed by an employee or contractor are subject to tax if the tickets used to earn them were paid for by the person's employer or client.¹¹⁵ Employers are required to pay employer's social insurance contributions. To be taxable, a benefit need not have been received directly from an employer; it is sufficient if the benefit was received in the course of a person's gainful employment or contractual duties. Employers are required to inform the relevant tax authority of frequent flyer bonus points awarded for flights paid for by them where these have been redeemed by their employees. Employees must provide employers with whatever information the latter may require to discharge their liability to supply tax authorities with relevant verification data. Under existing tax legislation, employers and employees may face sanctions in the form of tax surcharges – and, in the case of employees, criminal penalties for breaches of the Tax Offences Act – if they fail to report use of bonus points.

¹¹⁴ Ruling by the Gothenburg County Court, 18 June 2001.

¹¹⁵ The same applies if the ticket is for a trip in connection with the business activities of a self-employed person or of a trading company of which the traveller is a joint owner.

Effective taxation, however, presupposes reasonable means to verify basic data and it is clear that the structure of frequent flyer bonus systems combined with the fact that bonus points are not taxable until they are actually redeemed – which may happen several years later and under another employer – seriously hamper efforts to verify utilisation of benefits. If an employee has earned bonus points under a previous employer, it is the latter who will be liable for social insurance contributions based on the value of the trip made using the bonus points earned. Where points earned under two employers are used towards a single journey the social insurance costs must be shared between them. In cases where bonus points are earned abroad and thus not registered in Sweden, obtaining the necessary data is practically impossible.

4.1.4 Competition

The importance of strengthening and maintaining – and thereby promoting – the development potential in small and medium-sized enterprises was emphasised in the *travaux préparatoires* of the Competition Act. This is a vital goal of Swedish competition policy as these companies help to foster healthy competition by virtue of their flexibility and dynamism. It was also stressed that the substantive prohibitions laid down in the act were intended to promote a favourable climate for small and medium-sized enterprises and were designed to target factors that could prove detrimental to small companies in particular.¹¹⁶

The task of the Competition Authority is to promote efficient competition in private and public activities of benefit to consumers. This is achieved *inter alia* by examining evidence of behaviour tending to restrict competition, in accordance with the provisions of the Competition Act. The agency is also required to propose amendments to existing rules and regulations and measures aimed at removing barriers to efficient competition in the private and public sectors.

The Competition Act is based on the prohibition principle enshrined in competition law, according to which certain hindrances to free competition are damaging in themselves and should be banned. As

¹¹⁶ Govt Bill 1992/1993:56.

its opening section states, the aim of the act is to remove and actively oppose obstacles to efficient competition in connection with the production of and trade in goods, services and other commodities. The act is modelled on Community law. As its *travaux préparatoires* make clear, the law was intended to mirror the regulations on competition in Community law as closely as possible.

The act prohibits anti-competitive cooperation between companies (Section 6), and abuse of a dominant position (Section 19). These provisions are based entirely on the prohibitions in Articles 81.1 and 82 of the EC Treaty. The provision in Section 7 of the Swedish Competition Act on the invalidity in civil law of agreements or terms of an agreement covered by the prohibition in Section 6 of the same act corresponds with Article 81.2 of the EC Treaty. Moreover, the substantive rules in the act are interpreted in the light of case law developed in Community courts. An amendment to the act, which came into force on 1 January 2001, gave the Competition Authority powers to apply Articles 81 and 82 of the EC Treaty at national level. Equivalent powers were conferred on the Swedish Market Court and the Stockholm City Court.

Community competition law is also intended to promote integration between member states. The competition rules in the EC Treaty are applicable when trade between member states is affected, while national competition legislation is mainly concerned with regulating national conditions. However, the definition of inter-state trade has been interpreted widely; a potential impact on trade is often sufficient to warrant application of EC regulations.

Thus any intervention by the Competition Authority in connection with market schemes or procedures, such as the implementation of FFPs by airlines, must be based on a suspected breach of the prohibitions in the Competition Act or in Articles 81 and 82 of the EC Treaty.

Anti-competitive agreements, Section 6 of the Competition Act

Section 6 of the Competition Act states that agreements between undertakings shall be prohibited if they have as their object or effect, the prevention, restriction or distortion of competition in the market to an appreciable extent. This applies particularly to agreements that:

1. directly or indirectly fix purchase or selling prices or any other trading conditions,
2. limit or control production, markets, technical development, or investment,
3. divide up markets or sources of supply,
4. apply dissimilar conditions to equivalent transactions with other trading parties, thereby placing them at a competitive disadvantage; or
5. make the conclusion of contracts subject to acceptance by the other parties of supplementary obligations, which by their nature or according to commercial usage have no connection with the subject of such contracts.

It should be emphasised that the above list is not exhaustive and that horizontal agreements are normally regarded as potentially more anti-competitive than vertical agreements as the present issue is by definition one of cooperation between actual or potential competitors where parties to the agreement operate in the same market.

Exemptions

Section 8 of the Competition Act states that the Competition Authority may grant exemption from the prohibition laid down in Section 6, where an agreement:

1. helps improve production or distribution or promote technical or economic progress,
2. allows consumers a fair share of the ensuing benefit
3. only imposes restrictions on the enterprises concerned if the former are necessary to the achievement of the objective referred to in 1 above, or
4. does not enable such enterprises to eliminate competition in respect of a substantial proportion of the commodities in question.

A decision by the Competition Authority to grant an exemption must be preceded by an application from the enterprise concerned. The principal implication of such a decision is that a prohibited procedure or action is permitted.

Abuse of a dominant position, Section 19 of the Competition Act

Under the Competition Act, any abuse by one or more enterprises of a dominant position in the market is prohibited. Section 19 of the Act contains a list of types of actions or procedures which may be prohibited if undertaken by a dominant player in the market. The list is not exhaustive. Abuse may, in particular, consist in:

1. directly or indirectly imposing unfair purchase or selling prices or other unfair trading conditions,
2. limiting production, markets or technical development to the prejudice of consumers,
3. applying dissimilar conditions to equivalent transactions with other trading parties, thereby placing them at a competitive disadvantage; or
4. making the conclusion of contracts subject to acceptance by the other parties of supplementary obligations, which by their nature or according to commercial usage have no connection with the subject of such contracts.

An action or procedure cannot be prohibited merely because an enterprise has been shown to enjoy a dominant position in the relevant market. The company must also have abused this position. The creation, maintenance or enhancement by a company of its dominant position in the market is wholly acceptable provided these proceed from the company's abilities.¹¹⁷ Thus a dominant company is not prohibited from acting in accordance with normal business practice or from doing what any enterprise is free to do, e.g. attempt to increase sales, cut costs or introduce new products.¹¹⁸ Even the

¹¹⁷ Govt Bill 1992/93:56, p. 86.

¹¹⁸ EC Court of Justice judgement in case 322/81: NV Nederlandsche Banden-Industrie-Michelin v Commission, ECR 1983, p. 3461, special Swedish edition no. 7, p. 351.

behaviour of a dominant enterprise may be a normal and reasonable response to a competitor's measures. Thus in order to establish that abuse has taken place, the effects on competition in the relevant market must be assessed.

The term 'dominant position' is defined as a position of economic strength enjoyed by an undertaking which enables it to behave to a great extent independently of competitors, of customers and ultimately of consumers. The main indicator of dominance is a large market share; other factors include the economic weakness of competitors, the absence of latent competition and control of resources and technology. A definition of abuse has been established through practice in a number of rulings by the EC Court of Justice. The one normally referred to in cases of alleged abuse of a dominant position was made in connection with the court's judgement in the Hoffmann-La Roche case.¹¹⁹

The concept of an abuse is an objective concept relating to the behaviour of an undertaking in a dominant position which is such as to influence the structure of a market where, as a result of the very presence of the undertaking in question, the degree of competition is weakened and which, through recourse to methods different from those which condition normal competition in products or services on the basis of the transactions of commercial operators, has the effect of hindering the maintenance of the degree of competition still existing in the market or the growth of that competition.

In general, it may be said that a dominant company has a special responsibility for ensuring that its practices and behaviour in the market do not hinder or restrict competition. In a ruling on a case, the EC Court of Justice stated that Article 86 (now 82) of the EC Treaty was not merely intended to refer to practices or procedures harmful to consumers but also to abuse which is harmful to them when such abuse affects market structures and hinders efficient competition.¹²⁰ As the court declared in its ruling on the Tetra Pak II case,¹²¹ the

¹¹⁹ Case *Hoffmann-La Roche*, ECR 1978 p. 207, p. 91; special Swedish edition no. 4, p. 315.

¹²⁰ Case 6/72: *Continental Can Company et al v Commission*, ECR 1973, p. 215, p. 26; special Swedish edition no. 2, p. 89.

¹²¹ Case C-333/94: *Tetra Pak II*, ECR 1996, p. I-5951, p. 24.

special responsibility which rests with a company in a dominant market position must be judged in light of the special conditions indicative in each case of weakened competition. All measures implemented by a company in a dominant position aimed at or resulting in the restriction or prevention of competition, or which hinder the development of competitive conditions are prohibited if they cannot be justified on objective grounds. This form of abuse is referred to as anti-competitive abuse.

In sum, the situation which the prohibition against abuse of a dominant position was specifically aimed at is one where competition in a given market has already been weakened by the presence of a company with a dominant market position, and where the said company by acting in an unfair manner harms conditions for actual or potential competition which are nevertheless still present. The assumption behind the prohibition of such practices in the case of a company with a dominant market position is that due to the company's strength, the practice will be aimed specifically at harming competition and the interests of other enterprises.

The prohibition under Section 19 of the Competition Act involves a so-called asymmetrical application of the law, in other words different rules apply to enterprises according to their market influence. What is forbidden for a company with a dominant position may be permissible for another whose position is not dominant. Practices such as loyalty discounts, exclusive agreements and refusal to deliver may be engaged in by undertakings that do not enjoy a dominant market position but not by those which do.

Non-intervention ruling

Under Section 20 of the Competition Act, the Competition Authority may declare in response to an application from a company that the prohibitions in Sections 6 or 19 of the Competition Act do not apply to a particular agreement or business practice. These declarations, known as non-intervention or negative clearance rulings, are based on data supplied by the company or otherwise available to the agency indicating that there are no grounds for intervention under the Competition Act. The rulings prevent the agency from subsequently issuing injunctions under Section 23, sub-section 1 of the act, or from fining companies for anti-competitive practices under Section 26.

4.2 Decision of the Market Court in the EuroBonus case

In 1998 the Competition Authority instituted an inquiry to examine the terms and conditions applied by SAS in its agreements with customers and travel agents and the manner in which the company operated its frequent flyer programme, EuroBonus. The agency had reason to suspect that through its application of the scheme, SAS was in breach of the prohibition laid down in Section 19 of the Competition Act concerning abuse of a dominant position.

The inquiry revealed that SAS had abused its dominant position in the Swedish aviation market in contravention of Section 19 of the act by operating its EuroBonus programme on domestic routes. It was deemed that in its capacity of dominant player, SAS made it difficult for other airlines to start up or maintain competitive domestic air services by reason of its EuroBonus programme.

With regard to the terms and conditions applied by SAS in its agreements with customers and travel agents, the Competition Authority did not regard intervention as justified as SAS had undertaken to remove virtually all anti-competitive conditions from such agreements following talks with the agency.

On 12 November 1999, in a decision under Sections 23 and 57 of the Competition Act, the agency ordered SAS on penalty of a fine of SEK 100 million to cease operating its FFP, EuroBonus, as of 12 December 1999 and to refrain from taking part in any similar programme in which points or their equivalent leading to bonus offers could be earned on domestic flights in Sweden.

SAS appealed against the decision by applying to the Market Court to have it overturned or, failing this, to have the fine deferred for a further 8 months and reduced to a reasonable size, as the amount – the airline argued – was in breach of the principle of proportionality. SAS maintained that the proscribed practice did not contravene the Competition Act and that the Competition Authority's demarcation of the relevant market was in any case incorrect and inconsistent with Community law.

SAS further maintained that the Competition Authority's order was in breach of the principle of the primacy of Community law over national law. Regarding entry into force, SAS claimed that it lacked the technical means to comply with the injunction in less than 8

months from the decision date. The company considered that a fine of between SEK 5 and 10 million was justified.

The Competition Authority contested the plea to change the decision on appeal and added that even if the relevant market had been incorrectly defined, which it did not concede, this would not in itself constitute grounds for rescinding the injunction. Nor was the decision inconsistent with Community law. A deferral of the date on which the injunction would take effect in accordance with SAS's second plea should not be granted in view of the FFP's harmful effects on competition conditions in the market. Regarding the size of the fine, the authority maintained that it was commensurate with total turnover for the SAS group.

The Market Court suspended the Competition Authority's decision pending a final ruling, which was announced on 27 February 2001.

Regarding the relevant market issue and SAS's position with respect to it, the court argued as follows: in a number of Community law cases dealing with scheduled transport services the market was defined in terms of the route(s) involved. In such cases, the court's assessment of prevailing competition conditions was chiefly made on the basis of one or more routes. However, the present case was different. The EuroBonus scheme was applicable to air travel everywhere in the country, using the network, with its hub at Arlanda airport, operated by SAS and its partners. The demand for flights to destinations everywhere in the country by business travellers, the group chiefly targeted by the programme, may generally be assumed. Companies – on whose account the journeys are made and by whom the travel expenses are paid – often sign customer agreements with SAS. Moreover, SAS enjoys a unique position in the Swedish civil aviation market as a whole. The company carries passengers to and from destinations in all parts of the country and its behaviour and practices have an effect on the entire domestic air travel market. Thus the various Community law rulings which SAS referred to were not directly relevant to the case. While individual carriers might be operating under very specific market conditions in terms of competition, there were grounds in this case for applying wider market demarcation criteria. In such cases, the degree of interchangeability between air transport and other forms of transport must be regarded as limited. The relevant market must therefore be defined according to the number of scheduled domestic passenger flights. The court did not consider that applying this criterion

endangered uniform implementation of Community law, or that demarcation in any other context was in breach of Community law. In the market thus defined, SAS commands a dominant position.

The court then turned to the question of whether SAS's operation of the EuroBonus programme constituted an abuse of its position. On this point it reasoned as follows: FFPs undeniably have a loyalty-inducing effect. Airlines introduce such schemes with the express purpose of inducing travellers to use their services. The attraction of an FFP is greater if the carrier has a network that gives travellers plentiful opportunities to earn bonus points and to use them for bonus travel. The EuroBonus programme operated by SAS must be regarded as an attractive scheme from the loyalty viewpoint as travellers have abundant opportunities to earn and use earned bonus points on SAS's extensive domestic and international routes as well as those operated by members of the Star Alliance network. The fact that business trips are paid for by the traveller's employer while bonus points can be used by the traveller on non-business journeys makes the programme all the more attractive. As the benefits of membership of the EuroBonus programme are most favourable when a traveller confines his/her journeys to SAS or the alliance of which the company forms a part, the scheme has a powerful loyalty-inducing effect. The 'tying' of travellers to SAS or its partners entailed by the EuroBonus programme thus limits the ability of other airlines not included in the scheme to attract customers to their routes and makes it more difficult for new players to become established in the Swedish domestic air transport market. Conditions in this market are not conducive to the entry of new players and competition is restricted. SAS enjoys a strong position in this market due to its earlier monopoly position. Thus basic structural conditions create a market situation in which competition itself is limited. SAS's EuroBonus programme, with its significant loyalty-inducing and market-barrier effects imposes further obstacles to the maintenance and development of existing competitive conditions. Under the circumstances, SAS's EuroBonus programme cannot be considered an acceptable competitive strategy. The fact that most major international carriers operate FFPs of some kind on domestic as well as international routes and that such schemes are long-established and generally accepted competitive instruments does not alter the case. Nor is it reasonable to assume that a ban on the operation of the EuroBonus scheme on Swedish domestic routes would significantly weaken SAS's position as a partner, the position of SAS's partners, or the relative competitiveness of the Star Alliance. SAS's operation

of the EuroBonus programme in the Swedish domestic aviation market therefore constitutes an abuse of the company's dominant position. The airline's initial plea that the decision under appeal be rescinded cannot therefore be upheld.

The Market Court further stated in connection with its decision that an injunction should be no broader than was necessary to eliminate the anti-competitive effects of a particular practice. The court also stated that scope for competition in the Swedish domestic air transport market was restricted. The possibility of competing air services operating successfully under existing conditions was virtually non-existent except in a small number of cities. Under the circumstances, an injunction to refrain from operating or taking part in the operation of the EuroBonus programme should be limited to air traffic between destinations where SAS or partner airlines operating in cooperation with SAS within the said bonus scheme are in competition with existing or newly established scheduled passenger air services.

For the purposes of the Market Court, the term 'newly established' refers to air traffic between certain destinations. Air traffic to towns or cities with more than one airport (such as Stockholm, with Arlanda and Bromma airports) should be regarded as air traffic to one destination.

The Market Court's decision amended the agency's injunction in one respect only: SAS was ordered on penalty of a fine of SEK 50 million to cease operating the EuroBonus programme as of 27 October 2001, and to refrain from taking part in any similar scheme in which points or their equivalent leading to bonus offers could be earned on domestic routes where SAS or a carrier operating in cooperation with SAS within the said bonus scheme is in competition with existing or newly-established scheduled passenger air services.

5 Effects of frequent flyer programmes¹²²

- Frequent flyer programmes can distort incentives in the market, particularly if the person who uses a service is not the one who is paying for it.
- FFPs also lead to higher switching costs, i.e. the cost to the traveller of switching from one airline to another, by giving travellers a stronger incentive to use the same airline again.
- There is theoretical evidence to suggest that switching costs may result in substantial welfare losses in the form of lower production and consumption and higher prices.
- The SAS EuroBonus programme has resulted in higher prices for SAS business travellers. The SAS price increase, compared with the prices of other carriers, amounts to approx. 12 per cent of the average ticket price for airlines on competitive routes.
- Switching costs increase by about SEK 500 per traveller during membership of the SAS EuroBonus programme, which corresponds to almost 15 per cent of the average ticket price.

5.1 Introduction

As stated in Chapter 3 above, one of the aims of loyalty programmes (frequent flyer programmes, FFPs) is to influence the behaviour of travellers in such a way that they become more

¹²² The contents of this section are based principally on a report by Ass Prof Jerker Holm of Lund University concerning loyalty programmes viewed from an economic perspective, and an econometric study by Fredrik Carlsson (PhD) of the Department of Economics, School of Economics and Commercial Law, Gothenburg University, concerning the consequences of introducing FFPs for domestic air travel in Sweden and of imposing limitations on such programmes. Both reports were commissioned by the Competition Authority.

inclined to seek a specific airline's products and services. Briefly, the members of an FFP are awarded points for the travel they undertake. Other forms of consumption, too, such as hotel bookings, entitle the member to points. These points can be saved for a fairly lengthy period of time¹²³ and be used for free bonus travel as a reward for the loyalty that the traveller has shown the airline. Travellers accumulating a sufficient number of points over a given period have their membership levels upgraded. An upgrade can bring additional benefits of various kinds. Beside direct benefits such as priority check-in facilities and access to special lounges, an increase in personal benefit (private utility) is also involved as the traveller granted an upgrade feels special as an individual.

From an economic viewpoint, an FFP may be compared to a consumption option that is redeemable given a certain range or number of events occurring at a future date, i.e. a sufficient number of bonus points must be earned by means of certain actions. When further bonus points are earned, the requirement whereby certain events must occur for the option to be redeemed is moderated. In terms of utility theory, bonus points give travellers greater benefit in the form of free travel at a future date. The extent to which bonus points affect a traveller's benefit depends on the person's marginal valuation of various consumption alternatives and on the alternatives to which the traveller expects to be given access.

The size of an airline and its range of products are factors in the FFP's power of attraction. In many respects, an airline with a relatively extensive range is better placed to offer an attractive FFP than a carrier with a less extensive range.¹²⁴ Firstly, an airline with an extensive range of products can offer travellers a wide selection of bonus trips, and FFPs that offer a greater number of alternatives are valued more highly by travellers. Secondly, a traveller is more likely to accumulate enough points for a bonus trip if the airline has a relatively large range of routes and departures. Thirdly, a traveller may consider that a large airline is less likely to go bankrupt than a small newcomer. The greater the likelihood of an airline going

¹²³ The account provided in Chapter 3 shows that this period usually amounts to 3-5 years.

¹²⁴ One alternative for a small carrier wishing to offer an FFP of an adequate standard is to enter into an alliance with other airlines. A large airline, however, is in a better position than a small one to enter into an alliance with other large airlines.

bankrupt, the less inclined a traveller is to take part in its FFP. In other words, a large airline has a relative advantage over a smaller one.

5.2 Incentive and competitive effects of FFPs

Below, we describe in greater detail – based on simple theoretical argument – how FFPs affect travellers' inclination to choose a particular airline. In one of the cases the traveller's employer pays for the trip while in the other the traveller himself/herself pays. This theoretical analysis is followed by a discussion of the possible impact on competition and the implications for consumers.

Most business travellers do not pay for their air travel themselves. A lower ticket price reduces the cost to the employer but normally does not result in any direct advantage to the traveller. The effects that a loyalty programme can have may be simply described in the following terms. If a traveller is to undertake a journey and the private utility (u)¹²⁵ of flying with company A (expressed as u_A) is greater than the utility of flying with company B (expressed as u_B), the traveller chooses company A regardless of the price as it is the employer who pays for the trip, given that the traveller does not take the cost to the employer into consideration. A loyalty programme will change the decision criteria as the traveller then also considers the additional utility that further bonus points would entail. This additional utility is designated α for a journey with company A and β for a journey with company B. The decision criterion for the traveller is that he/she chooses company A if $u_A + \alpha > u_B + \beta$. This means that a traveller can choose a less comfortable journey if the bonus points are felt to offset the loss in comfort. There is also reason to note that the incentive to undertake travel that is wholly or partially unnecessary increases in the presence of an FFP for travellers who only consider their own interests.

Probably, most travellers consider both their own benefit and employer costs when making travel decisions. The extent to which

¹²⁵ Utility.

an employee takes employer costs into consideration is individual, and depends on the procedures of the company concerned. This may be illustrated by taking the utility designations outlined above and measuring them in money terms, i.e. in a quantity of Swedish crowns (SEK). The price differential between the two companies' tickets is expressed as $p_A - p_B$. A parameter, c , is then introduced to denote how much a crown saved for the employer is worth to the employee. If $c=1$ the employee equates the value of employer income with his/her own, and if $c=0$ the employee accords employer income no value whatsoever. It is reasonable to suppose that the c value lies somewhere between 0 and 1. In the absence of an FFP, the decision criterion for the traveller is that company A is chosen if $u_A - u_B > c(p_A - p_B)$. The extent to which costs will affect the traveller's decision depends on the size of c . If both companies have an FFP, the decision criterion changes so that company A is chosen if $(u_A + \alpha) - (u_B + \beta) > c(p_A - p_B)$. An extreme case arises if $c=1$, which means that the traveller is a 'perfect' agent of his/her employer. Such a traveller would not choose a more expensive flight unless this was justified by the presence of sufficiently great differences in utility between the two companies. One such aspect, to the traveller, is an FFP. If an FFP entails a sufficiently large increase in utility, it is quite possible that the programme will affect the decision of a 'perfect' agent.

When travellers pay for their flights themselves, their decisions will be directly influenced by any differences in price. Based on the aforementioned, a traveller will choose company A before company B if $u_A - u_B > p_A - p_B$. A product with a higher price will only be chosen if this can be justified by greater utility. If a traveller is a member of both companies' FFPs, company A is chosen if $(u_A + \alpha) - (u_B + \beta) > p_A - p_B$.¹²⁶ If, however, a traveller belongs to only one of the FFPs (that of company A), company A is chosen if $(u_A + \alpha) - u_B > p_A - p_B$. The bonus benefit offered by company A induces the traveller to accept higher prices charged by company A than would have been the case without membership. Assume, for instance, that service content is identical, i.e. $u_A = u_B$. In the

¹²⁶ It is worth noting that the sizes of α and β may differ for different types of travellers. There is much to suggest, for example, that business travellers who travel frequently rate α and β more highly than a private traveller does.

absence of an FFP, the company with the lowest price would be chosen, but when a bonus benefit is present the traveller will be prepared to accept that company A charges a higher price for its services as long as the price differential is no larger than the value of α . As the traveller would forfeit bonus benefit α were he/she to choose a different airline to the one whose FFP he/she belongs to, benefit α represents the cost to the traveller of switching from, in this case, company A to company B.

The cost to the traveller of switching from one airline company to another is called the switching cost. This cost is dependent on a number of factors, such as the absolute and relative size of the carrier, the number of its departures, number of departures among its competitors, the geographical location of airports used by the various carriers, and the presence of FFPs. Frequent flyer programmes contribute to switching costs by giving customers a stronger incentive to use the same airline company again, which raises the cost to the customer of switching companies. It also reduces competitors' chances of attracting customers away from that airline.¹²⁷

As may be seen from the above, there is reason to believe that FFPs distort market incentives. Despite these kinds of adverse effects, it is not clear how FFP presence impacts on competition, i.e. we do not know the market outcome in terms of prices and number of departures. An FFP has the potential to affect both prices and product range and thus affect consumers as well. Even if FFPs affect travellers' choice of airline, it is not clear what impact this has on prices and number of departures in equilibrium.

When an FFP is introduced, the airline concerned becomes more attractive than other airline companies or other modes of transport. In other words, willingness to pay (WTP) for choosing the company with the frequent flyer programme should increase, and, all else equal, the company can charge a higher price for its flights. The company can also reduce the number of its departures as the WTP for flying with it has increased. Competitors are motivated to

¹²⁷ In Annex 3, Carlsson (2003) describes a number of empirical studies of the effects that switching costs have on, for instance, prices. On the basis of relatively new literature in this field, Carlsson has also estimated switching costs among Swedish airlines on various domestic routes and analysed the impact of FFPs on these costs. See further Section 5.3.

respond to the competitive upturn that an FFP engenders by lowering their prices, increasing the number of their departures or raising the quality of their product range. The impact of these effects depends on such factors as the degree of substitution between the companies' products and the price sensitivity of customers.

If the companies' products are close substitutes, impact on competitors' prices will be considerable. The more price-sensitive a customer is, the less the impact will be on price. It is reasonable to assume that two companies operating at the same airport and on the same route will be closer to substitution than two companies operating at different airports on the same route, i.e. the impact on competitors' prices in the latter example will be more extensive than would otherwise have been the case. Also, different categories of customers may be more or less price-sensitive. Undertakings, for instance may be less price-sensitive, i.e. show greater WTP, than private travellers.¹²⁸ If this is the case, impact on price is greater in the business traveller category than in the private traveller category.

Also, a price war might conceivably result were two airline companies to begin competing with a frequent flyer programme each. An analysis of such a situation has been performed by Klemperer (1987). The model is based on two companies – A and B – choosing what quantities they wish to offer on the market over two separate periods. In this model, travellers using the same company in both periods receive a bonus benefit corresponding to the switching cost. In addition, each customer seeks only one service in each period and this service is homogenous, i.e. the two companies' services are perfect substitutes. In the second period, the customers become less price-sensitive as the switching cost means that the difference in price between the companies' services must be greater than the value of the bonus benefit if customers are to switch companies. This in turn causes the market to split up into customers loyal to company A and customers loyal to company B. Klemperer shows that the outcome in equilibrium in the second period may be due to the two companies between them offering as little as a monopoly undertaking or a cartel practising horizontal

¹²⁸ In reviewing empirical studies, Oum et al (1992) find that price elasticity in the air travel market is between -0.8 and -2.0. However, there is empirical evidence to suggest that companies are less price-sensitive than private travellers.

price collusion would do. Although the companies are competing, the switching cost means that the offered quantity is partially reduced in the second period. Outcome in the first period, however, is different. As the two companies' profits in the second period will depend on how many customers they managed to 'lock in' during the first period, competition over market shares in the first period will be intense. This competition benefits customers but is less profitable for the two companies. While no general conclusions can be drawn as to whether price and profit levels rise during the two periods, the model demonstrates some interesting competitive mechanisms generated by switching costs. These mechanisms can be linked to an analysis of the impact of FFPs on domestic markets. If a totally dominant company is initially present, it can build up a loyal customer base without any great competition over market shares that would benefit customers. The lower level of price sensitivity among these customers can subsequently be exploited in the domestic market, but also in the international market.

An FFP can also limit competition by reducing the number of airlines active in the market. In addition, it can impede the entry of market newcomers, as the presence of such a programme may reasonably cause an airline considering entry into the market to decide that such a move would be unprofitable. In a model by Cairns and Galbraith (1990), the two undertakings have identical structures but the incumbent airline's customers have already accrued bonus points, which means they would incur a cost by choosing to travel with the newcomer. If the incumbent airline sets the prices so low that the 'normal' profit is zero, the airline considering market entry must, due to the switching cost, set prices even lower in order to attract customers. If both airlines have the same level of production costs, either the newcomer will make a loss or no customers will seek its services, which means entry is likely to be unprofitable. In other words, FFPs by creating switching costs can have a deterrent effect on entry.¹²⁹

It is worth noting that FFPs may also have favourable macroeconomic effects. One such effect could result from benefits of scale in production. This is due to the presence of substantial

¹²⁹ This effect is reinforced if an incumbent company is large (dominant) and has numerous members in its FFP. A company considering entry into such a market must be prepared either to offer a substantially better FFP, better quality services or markedly lower prices.

fixed costs that are volume-dependent. If the production level at which average cost stops falling is so high that it exceeds demand throughout the market, the market could be described as a natural monopoly. In such a market, it is more costly to divide production between two companies than to let a single company be responsible for all production.¹³⁰ If the reductions in cost on the supply side are large enough, FFPs – by contributing to greater travel – can boost socioeconomic efficiency. Previous empirical studies, however, give no indication that any substantial benefits of scale result from the supply of air travel except those associated with aircraft size, where cost per seat is lower in a large aircraft than in a small one.

Another favourable effect may arise via the administration and registration of bonus points. Airlines with FFPs must have some kind of administrative system for registering their members' points. Often, millions of points are involved, and the resources required for managing administrative systems are for the most part a socioeconomic cost. At the same time, however, there is an informational dimension in that airline companies, via their bonus systems, have access to information about their members' preferences and travel behaviour. This in turn means that the marketing of certain kinds of services can target specific groups, which can increase efficiency in information supply.

As illustrated by the above, there is theoretical support for the argument that FFPs can have adverse socioeconomic effects, especially if a dominant company is initially present in the market. It is not possible, however, to draw any general conclusions concerning the impact of such programmes on airline prices and number of departures. To determine how FFPs affect travellers' choice of airline as well as the price of air tickets and the number of departures, empirical studies are required.

¹³⁰ It should be noted, however, that allowing more than one company to operate in such a market may be justified from a socioeconomic perspective. This would be the case if the same effects on factors such as internal cost efficiency and product development as a result of competition were greater than the adverse effects of not being able to fully exploit benefits of scale.

5.3 An empirical study of the Swedish domestic aviation market

For the purpose of quantifying more closely the various effects of FFPs on the Swedish domestic aviation market, the Competition Authority commissioned Fredrik Carlsson (PhD) of the Department of Economics, School of Economics and Commercial Law, Gothenburg University, to analyse the consequences both of introducing FFPs onto the domestic market in Sweden and of imposing restrictions on SAS's use of FFPs on domestic routes where it is in competition. Applying an econometric model, the impact of FFPs on airline prices and number of departures, have been examined. One problem when applying such an analytical method is that the introduction of restraints on SAS's use of FFPs in 2001 coincided with the general downturn in air traffic caused by the events of 11 September the same year in the US. This makes it difficult to separate the two effects. The analysis has focused, therefore, on a comparison between the period of time during which SAS operated its FFP and the period of time during which it did not. SAS began applying its EuroBonus programme in the domestic air travel market in May 1997. The Market Court's ruling limiting SAS's use of the programme on the domestic market entered into force on 27 October 2001. Estimates have been produced based on quarterly data from 1992 up until the third quarter of 2002. Carlsson also used a specific model to estimate switching costs, i.e. the cost to the traveller of switching from one airline to another.

Virtually all the data used in the analysis has been provided by the Swedish CAA or drawn from the airlines' own timetables. Regarding prices, information on actual ticket prices would have been preferable. Such information is not, however, available, and the analysis is consequently based on the prices specified in the airlines' timetables, i.e. list prices. So as to reduce the risk of analytical error, the most flexible ticket has been chosen for the study, i.e. the one with the least number of restrictions concerning its use. The aim was partly to make comparisons between airlines as straightforward as possible and partly to facilitate analysis of an airline's prices over time. As it is mainly business travellers who travel on this type of ticket, and on other more flexible but expensive tickets, this means that the analysis focuses on the business traveller segment. Carlsson's report and analyses are

included in full in Annex 3. Below, selected parts of the study and the results of estimated models are described.

Prices and departures

The model estimated for the present purpose comprises a price equation and a departure equation. The model has two endogenous variables, i.e. variables whose values are determined inside the model. These variables are price per kilometre and the number of departures. Price per kilometre is a function both of number of departures and of certain exogenous variables, i.e. variables whose values are determined outside the model. Examples include a variable for demand shift, such as an increase in gross domestic product (GDP). Similarly, number of departures is a function both of price per kilometre and of certain exogenous variables. The endogeneity problem inherent in this model, i.e. the fact that airline prices and number of departures are determined simultaneously, has been resolved by using the ‘two stage least squares’ (2SLS) estimation method. In determining functional form, Carlsson chose an additive, linear model and a multiplicative model linearised through logarithming (log-linear model). The selection of independent variables in the models is based on earlier theoretical and empirical studies. The variables used in the estimated models are described and defined in Annex 3, Sections 2.1 and 3.1. Estimations of the price model for competitive routes are presented in Figure 11.

Figure 11 2SLS estimates, where the dependent variable is ticket price per km. Competitive routes. *P*-value is the observed significance of the hypothesis that the coefficient is equal to zero.

Variable	Linear model		Log-linear model	
	Coefficient	<i>P</i> -value	Coefficient	<i>P</i> -value
<i>Competitor price</i>	0.4432	0.0000		
<i>Departures</i>	0.0031	0.0000		
<i>Deps.(comp.)</i>	0.0004	0.1040		
<i>Distance</i>	-0.0281	0.0001		
<i>Capacity</i>	-0.0159	0.0012		
<i>Population</i>	0.00007	0.6136		
<i>Ln (Comp. price)</i>			0.4230	0.0000

<i>Ln (Departures)</i>			0.1342	0.0022
<i>Ln (Deps.comp.) .)</i>			-0.0006	0.9772
<i>Ln (Distance)</i>			-0.9738	0.0000
<i>Ln (Capacity)</i>			-0.2483	0.0000
<i>Ln (Population)</i>			1.2350	0.0000
<i>Herfindahl</i>	0.0152	0.9869	0.1376	0.1603
<i>Max. price rail</i>	0.0005	0.4744	0.0000	0.7775
<i>Shortest rail time</i>	-0.3995	0.0707	-0.0220	0.4297
<i>SAS</i>	-1.6394	0.0000	-0.0700	0.0375
<i>FFP</i>	-0.3487	0.1178	-0.0402	0.0920
<i>SASF</i>	0.9937	0.0000	0.1009	0.0001

In both models, the coefficients for competitors' prices are, as expected, positive and significant. The introduction of increased or reduced ticket prices by competitors causes an airline to raise or lower its own ticket prices. The outcome of the additive linear model shows that an airline reduces its price by approx. SEK 0.44 per kilometre if competitor price declines by SEK 1.0 per kilometre. In both models, the coefficients for distance and capacity, defined as the number of seats per departure, are negative and significant, which supports the hypothesis that price per kilometre declines if either of these two variables increase.

Further, the coefficients for number of departures are positive and significant. The number of departures affects the total cost to the traveller of going by air. Total cost includes both monetary costs and time costs. Reduced time cost necessitate a higher service content, and consequently an increase in number of departures leads to a higher price per kilometre. According to the estimates of the linear model, the price increases by approx. SEK 0.30 per kilometre if a company increases its departures by 100 per quarter. The coefficient for the Herfindahl Index, which measures market concentration, is not significant in any of the models. Rail travel time has a significant effect on prices in the linear model but not in the log-linear model, while the coefficient for rail prices is non-significant in both cases. The estimated rail travel time variable, however, has not produced the expected sign as it shows that if the shortest rail travel time declines, i.e. if rail travel becomes more competitive, ticket prices will increase.

The variable FFP is a variable designed to identify differences in price between periods when the SAS EuroBonus scheme is in place and periods when it is not. This variable assumes the value of 1 during the period (quarter) when the bonus programme is in place and the value of 0 otherwise. In order to distinguish the effect of bonus programmes between SAS and other airlines, the model contains a variable (SAS) equal to 1 if the company is SAS and an interaction variable (SASF) equal to the product of the FFP and SAS variables. The SAS variable is designed to measure differences in price between SAS and other airlines that cannot be determined via the other variables, while the SASF variable measures the effect of the SAS EuroBonus programme in relation to other airline companies.

The estimated models show that SAS, all else equal, has a lower price per kilometre than other airlines. According to the linear model, the difference is almost SEK 1.60 per kilometre in SAS's favour. The estimates also show that in the case of airlines other than SAS, ticket prices are lower during periods when the SAS programme is in place than during periods when it is not. One explanation for this is that airlines without a bonus programme similar to that of SAS have to reduce their prices in order to remain sufficiently competitive. The effect on SAS prices, however, is the reverse. SAS ticket prices increase in relation to the prices of other airlines during periods when the EuroBonus scheme is in place. According to the results of the additive model, the increase is almost SEK 1 per kilometre.

The estimated value of the parameters for the FFP and SASF variables have different implications for the ticket price. As Annex 3 (Table A2) shows, the average distance between airports is just under 440 kilometre and the average ticket price for airlines on competitive routes is approx. SEK 3,400. This means that on average the ticket price for airlines other than SAS is approx. SEK 150 lower during periods when the SAS EuroBonus is in place than during periods when it is not (see also Annex 3, Table 7). This decline in price corresponds to just over 4 per cent of the average ticket price for these airlines. In the case of SAS, the estimated ticket price increases in relation to the prices of the other airlines by between SEK 375 and 440 during periods when the EuroBonus scheme is in place. Results also show that the SAS price is SEK 225-290 higher during periods when its FFP is in place than during periods when it is not. Thus FFPs – on competitive routes – lead to

higher ticket prices for SAS both in relation to other companies and in relation to periods when the EuroBonus programme is not in place. In comparative terms, the SAS price increase for business travellers represents about 12 per cent of the other airlines' average ticket price. Compared with periods when SAS has no FFP in place, the increase in its ticket price is about 8 per cent of the average ticket price.

Figure 12 below shows estimates for the dependent variable number of departures on competitive routes.

Figure 12 2SLS estimates, where the dependent variable is the number of departures supplied by an airline. Competitive routes. *P*-value is the observable significance of the hypothesis that the coefficient is equal to zero.

Variable	Linear model		Log-linear model	
	Coefficient	<i>P</i> -value	Coefficient	<i>P</i> -value
<i>Price</i>	-240.9	0.0029		
<i>Competitor price</i>	41.49	0.1420		
<i>Departures comp. .</i>	-0.6386	0.0000		
<i>Capacity</i>	-8.2164	0.0003		
<i>Population</i>	0.0027	0.5530		
<i>GDP</i>	6304	0.0000		
<i>Ln (Price)</i>			-1.3601	0.1330
<i>Ln (Comp. price)</i>			0.0791	0.7482
<i>Ln (Departures) .)</i>			-0.2502	0.0061
<i>Ln (Capacity)</i>			-0.9153	0.0006
<i>Ln (Population)</i>			1.1060	0.4087
<i>Ln (GDP)</i>			1.4859	0.0000
<i>Herfindahl</i>	-241.5	0.2991	-0.0930	0.7250
<i>SAS</i>	209.5	0.0161	0.4250	0.0000
<i>FFP</i>	187.9	0.0001	0.1359	0.0000
<i>SASF</i>	43.01	0.5716	-0.0300	0.6546

As expected, a higher price per kilometre introduced by an airline leads to a decline in number of departures, although the coefficient is not significant in the log-linear model. If an airline company raises its price by SEK 1 per kilometre, the number of departures declines by almost 240 per quarter. Also, a company's number of departures declines if competitors increase their number of departures. According to the results of the additive linear model, a company's departures decline by just over 60 should competitors increase their departures by 100 per quarter. Number of departures

will also decline if capacity (number of seats per departure) increases. Greater demand in the economy, expressed in the model as a shift in GDP in real terms, leads as expected to an increase in the number of departures for an airline. The results also show that SAS, all else equal, has a larger number of departures than other airlines. According to the results of the additive model, SAS, all else equal, has 209 more departures per quarter than other airline companies.

The estimate for the FFP variable is positive and significant in both models, i.e. the number of departures during periods when the SAS EuroBonus scheme is in place is larger than during periods when it is not. The SASF variable, however, is not significant, i.e. there is no significant difference between SAS and other airlines. As Carlsson's analysis shows, it is not clear how this should be interpreted. One reason why the impact of FFPs on the number of departures does not differ between airlines is that companies other than SAS use number of departures as a means of dealing with the increased competition that an FFP engenders. With a view to examining the impact of FFPs on the number of departures more closely, an estimated model has been developed in which the dependent variable is the total number of departures for all airlines. The outcome (see Annex 3, Table 4) supports the proposition that the presence of the SAS EuroBonus programme entails an increase in the number of departures for both SAS and other airlines on competitive routes. Also, the number of departures is greater in markets or on routes where three companies (triopolies) operate simultaneously, i.e. a larger number of airlines than two (a duopoly) results in an increase in the total number of departures.

Models have also been estimated for non-competitive routes (see also Annex 3, Tables 5 and 6). As in the case of competitive routes, results show that a greater number of departures for an airline leads to a higher price per kilometre. As regards the presence of an FFP, both models show no significant difference in price, i.e. the results do not support the proposition that SAS's EuroBonus scheme has resulted in higher prices on non-competitive routes. The presence of FFP does, on the other hand, have a significant positive effect on the number of departures. According to the results of the additive linear model, the increase corresponds to almost 14 per cent of the average number of departures on non-competitive routes. One explanation for this could be that FFP presence boosts the volume of air travel, which in turn generates positive network effects for the

airline serving most of the domestic routes included in the study, i.e. SAS. Carlsson's analysis shows that the estimated models for non-competitive routes, however, present problems of various kinds, for instance with regard to their functional form, which is not true of the estimated models for competitive routes.

Switching costs

Switching costs have been calculated for competitive routes, based on the model described in Annex 3, Section 2.2. The ticket price for business travellers and the total number of passengers per kilometre have been used as a basis. The calculation (see also Annex 3, Table 8) shows that the switching cost is significantly higher for SAS than for other airlines and also that these costs are on the whole substantial. According to the calculation, a traveller flying with SAS would on average require approx. SEK 2,400 per trip to switch to the smallest airline operating the same route. As the highest ticket price was used in the calculation, this sum may be viewed as an upper limit for switching cost. Average switching cost as a proportion of average ticket price amounts to almost 70 per cent. If, say, actual prices were 50 per cent lower than those used in the calculation, the switching cost for SAS business travellers would also be 50 per cent lower, i.e. in this case almost SEK 1,200 per passenger.

To determine more accurately what impact FFPs have on switching cost, a model has been estimated where the dependent variable is the switching cost for each airline. Figure 13 shows the estimation.

Figure 13 Estimated switching cost, where the dependent variable is the switching cost per airline. *P*-value is the observed significance of the hypothesis that the coefficient is equal to zero.

Variable	Coefficient	<i>P</i>-value
<i>Ln (Departures)</i>	653.9	0.0000
<i>Ln (Deps. comp.)</i>	-958.8	0.0000
<i>Herfindahl</i>	-4.74	0.9961
<i>SAS</i>	512.6	0.0000
<i>FFP</i>	-70.42	0.1343
<i>SASF</i>	487.1	0.0000
<i>Bromma</i>	204.4	0.0095

As expected, the number of departures has a considerable effect on the switching cost. If an airline increases its number of departures, the switching cost increases as a result of the added benefit of flying with that airline. Inversely, switching costs decrease for an airline if and when its competitors increase their number of departures. The estimated value of the SAS variable (513) deviates most significantly from zero. Thus the switching cost for SAS, all else equal, is just over SEK 500 more per passenger than for other airlines, while the switching cost for departures from Bromma Airport, all else equal, is higher than the cost of departures from Arlanda Airport. The estimate for the FFP variable is insignificant, i.e. for airlines other than SAS, frequent flyer programmes do not have any significant effect on switching cost. FFPs do, however, have a significant effect on the switching cost for SAS travellers. As the estimated model shows, the switching cost for SAS business travellers increases by almost SEK 490 per passenger during periods when the SAS EuroBonus scheme is in place, which corresponds to almost 15 per cent of the average ticket price for airlines on competitive routes. Thus a business traveller belonging to the EuroBonus scheme and flying with SAS would demand approx. SEK 500 per trip to switch to an airline other than SAS, all else equal between the various airline companies.

5.4 Summary of conclusions

One of the aims of frequent flyer programmes is to influence travellers' behaviour so that they become more interested in seeking the products of the airline concerned. FFPs can distort market incentives, especially if the person using a service is not the one who pays for it. An employee undertaking a business trip, for instance, may choose a more expensive travel alternative although such a choice may not be justified by the difference in quality. Although FFPs may have negative incentive effects, it is not clear how the programmes affect competition, i.e. market outcome in the form of prices and number of departures.

One important factor in both empirical and theoretical analyses of such effects is switching cost, i.e. the cost to the traveller of switching from one airline to another. FFPs contribute to switching cost by giving travellers a stronger incentive to use the same airline again, which raises the cost to the customer of switching companies. Basing his argument on theoretical models, Klemperer

(1995) notes that switching costs can result in substantial welfare losses in the form of lower production and consumption levels and higher prices. These costs may also represent a barrier to market entry and thus limit competition. According to Klemperer, the model outcome suggests that government authorities should combat activities that increase travellers' switching costs such as loyalty programmes and FFPs.

Switching costs in the air travel market apply both to prices and number of passengers, which means that to some extent such costs may be viewed as a measure of consumer welfare. Increased switching cost would in that case correspond to a decline in consumer welfare. It should be noted here that while travellers who do not switch to another airline are not directly affected by switching cost, they are affected indirectly, as prices are likely to increase when switching costs increase.

There are a number of studies showing the effects that liberalisation of the aviation market has had on prices and departures. However, there are relatively few empirical studies showing the impact of FFPs on such factors as competitive conditions, switching costs, customers' willingness to pay, and choice of airline.¹³¹ The studies that have been presented so far are largely based on data from domestic air travel in the US. In the case of the Swedish domestic market, no empirical studies concerning the effects of FFPs on airline prices, number of departures or switching cost have been carried out, as far as we know.

In Section 5.3, we described a model for estimating the effects of SAS's EuroBonus programme on domestic airline prices, number of departures and switching costs.¹³² The results of the analysis show that the EuroBonus scheme has resulted in a higher ticket price for SAS travel compared with the prices of other airlines and also compared with periods during which SAS did not apply EuroBonus on competitive routes. In comparative terms, the SAS price increase for business travellers represents about 12 per cent of the other airlines' average ticket price. Compared with periods

¹³¹ See for instance Cairns and Galbraith (1990), Morrison and Winston (1995), Nako (1992), Prousalaglou & Kopelman (1999), Storm (1999).

¹³² See also Annex 3.

when SAS has no FFP in place, the increase in its ticket price represents about 8 per cent of the average ticket price. In the case of airlines other than SAS, the EuroBonus scheme may have resulted in lower prices for business travellers. The effect is significant in one of the estimated models. The decline in price corresponds to just over 4 per cent of the average ticket price for these airlines.

Further, the results of the analysis show that the EuroBonus scheme has had a significant effect on switching cost for SAS travellers. According to the estimated model, switching cost for SAS business travellers increased by almost SEK 500 per passenger during periods when the SAS EuroBonus scheme was in place, which represents almost 15 per cent of the average ticket price for airlines on competitive routes.¹³³ There is, however, nothing to suggest that switching cost for airlines other than SAS is affected by the presence of FFPs.

Annex 3, Chapter 4, shows that the results of other empirical studies¹³⁴ of lock-in effects correspond fairly closely to the estimated changes in ticket prices and switching costs that result from the presence of FFPs as described above. This also indicates that the results for competitive routes are plausible. Consequently, there is much to suggest that the presence of SAS's EuroBonus programme has had an impact on the market, partly in the form of higher list prices for SAS travel and lower list prices for travel with competing airlines, and partly in the form of higher switching cost for SAS travellers. As SAS is the dominant airline on most competitive routes, its FFP has resulted in higher list prices for a large share of the business travel segment. The increase in switching cost shows that the EuroBonus scheme has had an impact on the way business travellers value the various airlines and thus on their choice of airline.

¹³³ As the discussion on prices in Section 5.3 shows, the most flexible ticket was used for the study, i.e. the one with the least number of restrictions concerning its use. The aim was partly to make comparisons between airlines as straightforward as possible and partly to facilitate analysis of an airline's prices over time. As the highest ticket price was used, it appears more reasonable to relate size of switching cost to percentage of ticket price. If, for instance, actual prices were 20 per cent lower than those used in the estimated model, actual switching costs would be 20 per cent lower than estimated costs.

¹³⁴ Cf Nako (1992) and others.

The effects described above suggest that frequent flyer programmes have had an anti-competitive impact on the Swedish domestic market, particularly when applied by an airline in a dominant position. The decision of the Market Court restricts SAS's use of its FFP, EuroBonus, and has thus limited the anti-competitive effects of the programme in the Swedish domestic market. This in turn has given new airlines a better chance of establishing services in the domestic market in competition with SAS.

6 International attitudes and efforts in relation to frequent flyer programmes

- Different countries and organisations view the competitive effects of frequent flyer programmes differently.
- Work relating to the competitive effects of FFPs has been and is being undertaken in various international forums, in the Nordic area and at European and global level.

6.1 Introduction

The basic regulations for the civil aviation sector are international in character. Traffic between different countries is largely governed by bilateral agreements, partly regulating which airlines are to be allowed to serve routes between the contracting countries and partly regulating the number of departures, etc.

In many countries outside the EU, the market is still substantially regulated. Many of the current problems in the competition field derive from structures in the international regulatory framework that originated in regulated markets. In previous reports,¹³⁵ the Competition Authority has proposed that Sweden should work actively to promote simpler and more up-to-date basic rules worldwide in order to achieve liberalisation and harmonisation. This remains the agency's position.

The European Commission has produced a White Book on Community transport policy up to 2010.¹³⁶ It discusses a wide range of issues and also presents a number of proposals and ideas displaying varying degrees of concretion, 'maturity' and analytical

¹³⁵ E.g. 'The development of competition in Sweden in the 1990s' (2000:1)

¹³⁶ European Transport Policy for 2010: Time to Decide

stringency. The Commission's aim is to adapt transport policy to the needs and demands of EU users. It is also seeking to promote growth in civil aviation by forging a single European sky by 2004 and setting up a common legislative body whose task will be to develop growth and safety targets and an integrated organisation for air traffic control. In addition, the Commission will strive for greater efficiency both in the utilisation of airport capacity and in the use of airports.

The Competition Authority takes an active part in the Commission's implementation of the EU competition rules concerning enterprises. It also keeps track of international developments in the competition field and takes part in the work of the Organisation for Economic Cooperation and Development (OECD), the World Trade Organisation (WTO) and the United Nations Conference on Trade and Development (UNCTAD).

Many business undertakings view the Nordic market as a single market. This, together with the similarity of market relations in the Nordic countries, has prompted the Nordic competition authorities to cooperate closely in many spheres. The Nordic competition authorities recently completed a joint project in the civil aviation field with the publication of their report, *Competitive Airlines*.

The EU's competition provisions are applied to anti-competitive practices likely to affect trade between the member states. The Commission cooperates closely with the national competition authorities when dealing with cases in this area. At a meeting of the ECA¹³⁷ in the spring of 2002, the heads of the national competition authorities in the EU/EEA member states agreed to appoint a working party to survey and analyse competition in the civil aviation market in the EU/EEA area.

The Competition Authority deals with such business as complaints and applications for dispensation submitted by undertakings to the Commission in Brussels. The agency takes part in advisory committees where the Commission consults with member states before reaching formal decisions on the matters before it. This close cooperation with the EU means that the Competition Authority

¹³⁷ ECA stands for European Competition Authorities. Its members are the director generals of national competition authorities in the EU/EEA.

handles a large amount of Commission business and takes part in meetings in Brussels.

The Competition Authority also has extensive bilateral contact with other competition authorities. In addition, it provides technological aid in the competition field, particularly to those countries that have applied for EU membership. Interaction between trade and competition policy is a subject area of particular interest to the OECD and the WTO, and promoting the entry of newcomers into various markets is a key issue in this respect.

6.2 Work in the Nordic countries

- The Danish competition authority takes the view that the use of a frequent flyer programme by a dominant player may constitute abuse of a dominant position as it makes it harder for other players to launch or maintain competitive services in the Danish domestic market.
- In Finland, the question of frequent flyer programmes has not been subject to review, but the Finnish competition authority has stated that it plans to evaluate the consequences of FFPs as part of a broader review of the Finnish civil aviation market.
- In Norway, the SAS group is prohibited from providing bonus points of any kind on any domestic route up to and including 1 August 2007. The Norwegian competition authority takes the view that SAS's application of FFPs leads to an inefficient use of resources which in turn reinforces macroeconomic detriment.

6.2.1 Denmark¹³⁸

The Danish Competition Authority (*Konkurrencestyrelsen*) has dealt with cases relating to frequent flyer programmes under Section 6 of the Danish Competition Act concerning anti-competitive agreements between undertakings. This section corresponds to Section 6 of the Swedish Competition Act. In a notification case relating to market cooperation between two airlines (SAS and Cimber Air), the Danish Competition Council applied the same approach as that of the Commission in a notification case between SAS and Lufthansa, as a result of which the partnership agreement was granted dispensation pursuant to the Danish Competition Act on condition that competing airlines were allowed to participate in SAS's frequent flyer programme on non-discriminatory terms. The dispensation expires in October 2003 and the Danish Competition Authority will then have to take a position on the matter once again.

According to the Danish Competition Authority, the use of an FFP may represent abuse of a dominant market position under Section 11 of the Danish Competition Act as such programmes have a powerful loyalty-inducing effect and make it harder for other players to introduce or maintain competitive services in the Danish domestic market.

The Danish Competition Authority is currently investigating the extent to which FFPs in general, and the SAS EuroBonus scheme in particular, impose restraints on competition in breach of the Danish Competition Act. The Danish Competition Authority, however, has encountered difficulties in relation to the FFP issue as Section 6 (3) of the Danish Marketing Practices Act contains a clause exempting frequent flyer programmes from the general provision in Section 6 (1) prohibiting traders from providing "any collateral gift or similar inducement" to users. In light of the international market situation that prevailed in 1993, SAS and other Danish and foreign airlines were given permission to use FFPs in the Danish market, via an amendment to Section 6 (3-7) of the Marketing Practices Act. Thus

¹³⁸ This section is derived largely from the Nordic report, *Competitive Airlines* (2002), and partly from the Danish Ministry of Economic and Business Affairs' communication, *Henvendelse i medfør af konkurrencelovens § 2, stk. 4 om rækkevidden af bestemmelserne i markedsføringslovens § 6, stk. 3-7*. (1 augusti 2002, Sag 2002-116/1-13 BB).

the Danish Marketing Practices Act allows airlines to use FFPs under the exemption clause.

The Danish Competition Authority has asked the Ministry of Economic and Business Affairs to give its interpretation of the matter and in so doing to describe the extent to which the airlines' FFPs – especially the SAS EuroBonus programme – are in a number of specific respects a direct or inevitable consequence of Section (3-7) of the Danish Marketing Practices Act relating to discounts. If such programmes are a direct or inevitable consequence of some other law, the Competition Authority cannot take action against them pursuant to the Danish Competition Act. This is similar to the situation in Sweden, where no action may be taken under the Competition Act against anti-competitive agreements or terms of agreement that fail to make provision for the expression of free will but are a direct and deliberate effect of other legislation or an inescapable consequence of such legislation.¹³⁹

In reply, the Minister of Economic and Business Affairs¹⁴⁰ noted a statement by the Danish Consumer Agency (*Forbrugerstyrelsen*) to the effect that FFPs and other loyalty programmes are permitted under the Danish Marketing Practices Act in certain circumstances, such as in the present case, where an international market situation had arisen.

In addition, the minister stated that it was not possible to discern from the wording of the Danish Marketing Practices Act whether airline companies had the right to personalise bonus points earned on international and domestic flights. To arrive at a proper interpretation, the answer would have to be sought in the actual purpose of the amendment to the Marketing Practices Act and in its *travaux préparatoires*.

According to the Consumer Agency's interpretation, the change was introduced as a direct result of the fact that under the Danish Marketing Practices Act an airline can decide that it is the traveller who is awarded the points for flying with it and not whoever pays for the journey.

¹³⁹ Govt. Bill 1992/93:56 p. 70.

¹⁴⁰ Bendt Bendtsen.

The Minister of Economic and Business Affairs stressed, however, that this view was based largely on an interpretation of the *travaux préparatoires* and that the Danish Marketing Practices Act was not altogether specific on this point.

6.2.2 Finland

There are only two players operating scheduled services on domestic civil aviation routes in Finland, Finnair and its partner, Golden Air. Finnair has a market share of approx. 96 per cent. Air Botnia, an airline in the SAS group, withdrew from the Finnish domestic market in 2002. Travellers flying on domestic routes can only accumulate points by flying with Finnair. Even before the withdrawal of Air Botnia, the domestic air travel situation in Finland differed from that of Sweden, for example, in that all passengers travelling on scheduled domestic flights could accumulate bonus points either by flying with Finnair or by flying with SAS.

While in principle the imposition of restrictions on FFP use similar to those introduced by the Swedish Market Court is possible under Finnish law, such a procedure would not be feasible in the opinion of the Finnish competition authority (*Kilpailuvirasto*) given the current market situation.¹⁴¹

The Finnish competition authority is planning to evaluate the market implications of FFPs as part of a broader review of the Finnish civil aviation market.

6.2.3 Norway¹⁴²

The Norwegian Competition Act is based on the principle of intervention rather than prohibition. In order to intervene against a suspected abuse of a dominant market position, the Norwegian

¹⁴¹ Competitive Airlines, p. 85.

¹⁴² This section is largely taken from the report '*Competitive Airlines*' and the Norwegian Competition Authority's published version of its decision concerning frequent flyer programmes in Norway (Notation of 18 March 2002), *Konkurranseloven § 3-10 –inngrep mot SAS, Wideroe og Braathens' bonusprogrammer, EuroBonus og Wings (V2002-22)*.

Competition Authority (*Konkurransetilsynet*) need only show that this could restrict competition and thus prevent an efficient utilisation of resources.

Following SAS's acquisition of Braathens in December 2001, the SAS group has a market share in the Norwegian domestic market of approx. 98 per cent. The Norwegian Competition Authority is of the opinion that the aviation market is sufficiently large to allow for competition on many domestic routes.

On 18 March 2002, the Norwegian Competition Authority decided, pursuant to Section 3-10 of the Norwegian Competition Act, to prohibit the SAS group (SAS, Wideroe Flyveselskap ASA and Braathens ASA) from allowing its passengers to earn bonus points from the EuroBonus programme, the Wings scheme or a similar FFP on any of the group's domestic routes in Norway.

The SAS group appealed the Competition Authority's decision to the Norwegian Ministry of Labour and Government Administration, which is the final arbiter under the Norwegian Competition Act. On 7 June 2002, the ministry turned down the appeal, and the ban entered into force on 1 August 2002.

In the Competition Authority's view, the application of FFPs means that customers obtain the greatest benefit by concentrating all their ticket purchases to a single airline or alliance. Thus FFPs encourage loyalty towards a specific alliance. This in turn, says the Norwegian Competition Authority, leads to a deterioration in market competition and allows the airlines in the alliance to set higher prices than they would otherwise have been able to.¹⁴³

Further, the Norwegian Competition Authority stresses that FFPs give travellers advantages, especially when it is the employer who pays for the ticket. Therefore, the agency says, travellers may often choose a different airline or route than the one the company employing them would have chosen. In the Competition

¹⁴³ Notation of 18 March 2002, p. 3.

Authority's view, this leads to inefficient utilisation of resources and reinforces macroeconomic detriment.¹⁴⁴

The prohibition, which will apply until 1 August 2007, extends to all types of points, i.e. those that can be used for bonus offers and those that can be used to upgrade members to a higher service level such as Gold or Silver class.

A traveller flying between, say, Trondheim and London and landing in Oslo en route cannot, under the prohibition, earn any points between Trondheim and Oslo. On the Oslo-London route, though, the traveller can earn points in the usual way. However, SAS may not award additional points on the Oslo-London route to a person who boarded in Trondheim, or anywhere else in Norway, in compensation for the loss of points on the domestic route.

The ban only applies to the award of bonus points on domestic routes in Norway. Thus the SAS group is still allowed to award bonus points on international routes and offer their travellers all types of services including travel in Norway when they redeem their points. Points earned can thereby be used to claim benefits such as domestic and international air travel.

The Norwegian Competition Authority's ban applies exclusively to companies in the SAS group in Norway. Thus it does not apply to partners in the SAS group's alliance registered in another country. The Competition Authority has, however, prohibited the SAS group from furnishing information to its partner airlines outside Norway that they might use to award points in their own allied FFPs for travel undertaken in Norway.

The NCA is of the opinion that the prohibition will enable new players to establish themselves in the Norwegian domestic market, in view of the fact that FFPs mean customers acquire the greatest benefit by concentrating all their ticket purchases to a single airline or alliance. Thus FFPs have a powerful loyalty-inducing effect by attracting customers to a specific alliance. This restricts competition and allows the airlines to set higher prices than would otherwise have been the case.

¹⁴⁴ Ibid.

In contrast to the ruling of the Swedish Market Court,¹⁴⁵ the Norwegian ban applies to all domestic routes whether they are competitive or not. The NCA contends that this kind of total prohibition is necessary in order to reduce barriers to market entry and re-open the market to competition. Even if the relevant market in some cases might consist of a single route between two destinations, a prohibition that only applied to certain routes would mean, given the significant economic network effects for the airlines, that the dominant company would still have a competitive edge on routes where it was not allowed to award FFP points.¹⁴⁶

The NCA further considers that a ban which only applies to certain routes and which is dependent upon whether a competitor appears on the scene does not convey a sufficiently unambiguous and transparent message to both sides of the market, i.e. to travellers and potential players.

The NCA argues that for the foreseeable future, the SAS group will be the only airline company capable of providing bonus travel to the overwhelming bulk of Norwegian airports. This in itself means that for the great majority of Norwegians, membership of the SAS group's FFP is likely to appear more attractive than membership of a foreign airline's FFP. This would be the case even if the possibility of earning bonus points on domestic routes no longer existed. In addition, travellers flying to other destinations in the SAS network would continue to have a reason for choosing airlines in the SAS group rather than spreading their purchases among a wider range of carriers, such as British Airways and Air France when travelling to London or Paris, for instance.

The prohibition on earning bonus points on domestic flights may also result in the SAS group encountering stiffer competition with regard to certain traveller categories abroad. This applies first and foremost to travellers who concentrate their trips to a specific destination and in doing so use earned points abroad. Also, those who frequently undertake domestic travel in another country will have a free choice of airline for trips to and from Norway.

¹⁴⁵ MD 2001:4

¹⁴⁶ Notation of 18 March 2002, e.g. p. 51.

The Norwegian Competition Authority has studied the SAS group's arguments against a prohibition but has found the fears expressed by the group concerning the effects of the decision to be exaggerated. In the opinion of the NCA, whether or not the SAS group loses international competitiveness depends largely on the company's own business strategy. Of particular importance, therefore, is whether and how the group chooses to reallocate 'earned' domestic points to its international routes.

Norwegian passengers earn more than half of their EuroBonus points on domestic flights in Norway. Were the SAS group to distribute bonus points on international routes instead of domestic routes in Norway, the Competition Authority stated, this could significantly increase its points awards on these routes and thus enhance its international competitiveness. While competing airlines could be expected to respond to such a move with similar measures, as in the case of the SAS group they would be unable to do so without incurring extra cost.¹⁴⁷

Even if the SAS group were to encounter intensified international competition, the Norwegian Competition Authority does not view this as a valid argument against the prohibition. Enhanced competition on routes to and from Norway would benefit both consumers and the economy in general.

6.3 The Nordic Task Force on Airline Competition¹⁴⁸

- The Nordic Task Force on Airline Competition urges all European competition authorities to critically examine the anti-competitive effects of frequent flyer programmes on their domestic civil aviation markets.

¹⁴⁷ Competitive Airlines, p. 84ff.

¹⁴⁸ The Nordic countries also cooperate in the Nordic Council of Ministers, although not primarily on aviation issues. One of the tasks of the Nordic Council is to promote Nordic intergovernmental cooperation in the transport sector. The aim of Nordic cooperation in this sector is to promote efficient, competitive, safe and environmentally acceptable transport and traffic in the Nordic area and surrounding countries.

In the autumn of 2001 and the spring of 2002, the Swedish Competition Authority took part in a joint project group, the Nordic Task Force on Airline Competition, together with representatives from Denmark, Norway and Finland. The project also had the support of the Icelandic competition authority. The mission of the Task Force was to compile a report containing a general survey of the participating countries' civil aviation markets and a review of the problems facing these markets from a competitive viewpoint.

The report, entitled *Competitive Airlines – Towards a more vigorous competition policy in relation to the air travel market*, also described proposals for tackling the competitive problems identified by the Task Force. It was presented to the other competition authorities in the EU at a meeting of the European Competition Authorities (ECA) in Athens on 18 April and was published in mid-May. In many areas, the Nordic countries have competitive problems of a similar nature.¹⁴⁹

The Nordic Task Force identified a number of factors that characterise frequent flyer programmes.¹⁵⁰

- 'Discounts' are granted not in the form of money but in the form of free services, which are not necessarily of the same type or quality as the purchased, points-based service. FFP bonus points do not represent an ordinary monetary rebate.
- To obtain free air trips to more or less remote destinations, customers have to surpass certain thresholds in terms of travel purchase. They thus have an incentive to purchase their travel from one provider or a limited number of providers. The closer customers get to a threshold the greater their incentive to purchase further flights from the same airline or alliance.
- The actual 'discount' is awarded to the customers themselves, who, in the case of business travellers, are not the ones who pay the fare. This gives rise to an enhanced principal-agent

¹⁴⁹ The term competition-related problems includes factors that may be viewed by newcomers and potential players as barriers to entry and thus may deter them or prevent them from entering the market.

¹⁵⁰ *Competitive Airlines*, p. 77ff.

(employer-employee) problem whereby the person making the travel choice, the employee, has a different set of incentives to the employer paying for the trip. This may result in a deterioration (greater inefficiency) in resource allocation.

- Although in principle a taxable benefit in many countries, the private use of FFP points earned by an employee from business travel is probably seldom taxed in practice, due to a lack of verification data available to the tax authorities, which in turn is due to the fact that it is the employee who is awarded the points and not the employer. This aggravates the principal-agent problem described above and promotes inefficiency.
- Allied airlines merge their FFPs so as to be able to offer travellers collecting bonus points attractive and wide-ranging networks. In this respect, small airlines and alliances are at a clear competitive disadvantage vis-à-vis large airlines and alliances. This means that FFPs strengthen both the dominant airlines' position in the market and the anti-competitive effects of the hub-and-spoke system, and thus represent a significant barrier to entry.

In concluding this part of the report, the Nordic Task Force urged all competition authorities in the EU zone to critically examine the anti-competitive effects of FFPs on their respective domestic markets.

6.4 The ECA Air Traffic Working Group¹⁵¹

- There is consensus among the members of the Working Group that FFPs increase customer loyalty to a particular airline company, which leads to switching costs for the traveller and thus creates artificial market barriers.
- A majority of the competition authorities, particularly those in Scandinavia, take a critical view of FFPs and their competitive impact in the air transport field.
- The Working Group's future agenda will include the development of common principles for the application of competition regulations to FFPs.

At a meeting of the ECA in Athens in the spring of 2002, where the above report by the Nordic Task Force on Airline Competition was presented, it was decided to set up a joint European group, the ECA Air Traffic Working Group, including representatives from the national competition authorities in the EU/EEA zone, the European Commission and the European Space Agency (ESA). Its task was to review competition problems and propose ways of improving competitive conditions in the European air travel market.

The Working Group was instructed to compile an interim report containing proposals for an agenda in preparation for the ECA meeting to be held in Stockholm on 5-6 September 2002. This meeting approved the agenda, which contained a number of priority issues.¹⁵²

As a first step, the group was to pursue work on these issues and present an interim report at the next ECA meeting in the spring of 2003.

¹⁵¹ ECA stands for European Competition Authorities. Its members are the heads of the national competition authorities in the EU/EEA.

¹⁵² See Interim Report of 5 September 2002.

In the course of this task, the members were asked if the dominant airline in their respective countries provided an FFP and if so whether this programme was open to the airline's competitors. If this was not the case, the members were asked whether competitors provided their own FFPs.

Virtually all the dominant airlines in the various countries provided FFPs of their own. In most cases, these were not open to competitors. The exceptions were SAS and Lufthansa, which had been ordered by the Danish and German competition authorities respectively to open up their FFPs to competitors on domestic routes.

Ordinarily, competitors on domestic routes in the various countries do not offer FFPs of the type offered by the dominant airline. Exceptions are to be found in Italy and the UK. Both British Midland Airways and Virgin Atlantic use FFPs.

The replies of the ECA Working Group members showed that since 1997 a number of national competition authorities in Europe had dealt with cases concerning FFPs. In the UK and Ireland, however, no such cases had been dealt with. The report also states:

“From an economics perspective, there is consensus that FFPs (as intended) increase the loyalty of the customers of an airline carrier and, by increasing the switching costs, create artificial market barriers.”¹⁵³

According to the report, most national competition authorities take a critical view of FFPs and their effects on competition in the air travel industry. The report also noted that it was difficult to determine how an FFP affected competition in a specific case.

The report showed that the Scandinavian competition authorities in particular took a very poor view of FFPs, basing their criticism on the market situation in their respective countries.¹⁵⁴

¹⁵³ Ibid., p. 16.

¹⁵⁴ See for instance Swedish Competition Authority report 902/1998, the decision of the Swedish Market Court (MD 2001:4) and the Norwegian Competition Authority's prohibition on the use of the EuroBonus scheme in Norway.

While the question of frequent flyer programmes and their effect on competition is not one of the issues under review by the Working Group during the first phase, it will be discussed further at a later stage. Joint principles are to be developed for the application of competition regulations to FFPs and company agreements.¹⁵⁵ This may lead to a harmonisation of restrictions in regulatory application in cases concerning FFPs.

¹⁵⁵ See Interim Report of 5 September 2002.

6.5 The European Commission

- The Commission takes the view that the use of FFPs in combination with a dominant market position or with a partnership in an alliance and additional market factors can have an anti-competitive effect as it represents an entry barrier to new or potential players.
- The Commission has not hitherto taken a position on whether FFPs in themselves are in breach of Community competition law, but in examining alliances between airlines has found that such programmes aggravate competition and has proposed remedies to alleviate this effect.

In recent years, the Commission has focused increasingly on the task of strengthening passengers' rights. To date, no detailed study has been carried out at Community level of the effect of FFPs on airline costs and ticket prices. In 2000, the Commission undertook an extensive review of passengers rights.¹⁵⁶ It identified FFPs and their use within the Union as an area worthy of special attention. After eliciting the views of carrier organisations, consumer organisations and travel agents in the EU zone, the Commission proposed the following course of action:

“FFPs are seen as a competition issue, in particular a potential barrier to entry to the market. As there is concern about the impact of these programmes but little proof of adverse effects on competition and no complaints have been made, since they are popular with passengers, it is not envisaged to propose action but to undertake a study as requested by the passenger organisations”.¹⁵⁷

¹⁵⁶ Air Passengers' Rights in the European Union: A Consultation Document on Consumer Protection in Air Transport.

¹⁵⁷ Ibid.

Hitherto, the Commission has discussed issues relating to FFPs only when scrutinising airline alliances.¹⁵⁸ In cases where the Commission has felt that an alliance might eliminate or severely limit competition, or lead to a dominant position in certain markets, the proposed alliance has only been approved on condition that the parties concerned undertake effective measures to avert such a risk. The Commission's position in such cases has been that the relevant parties must offer new players who have not hitherto enjoyed access to an FFP the opportunity to join theirs.

In a case involving cooperation between SAS and Lufthansa,¹⁵⁹ the Commission granted the two airlines a ten-year dispensation to operate as partners in alliance on condition that they complied with four conditions specified by the Commission itself. One of the conditions was that Lufthansa and SAS would be required, under certain circumstances, to give new players the opportunity to join and take part in the two airlines' FFPs on non-discriminatory terms.

The Commission's position was that, assuming compliance with the conditions imposed upon the airlines, the alliance should be viewed favourably as coordination of SAS and Lufthansa's FFPs would give travellers access to a more extensive programme of bonuses. The Commission felt that the conditions it had imposed would be sufficient to enhance competition vis-à-vis SAS and Lufthansa on routes between Germany and Scandinavia.

Besides the views submitted by the Commission to the ECA Working Group, the statements made by representatives of the Commission in various connections may serve as a guide to its opinion in the matter. In reply to a question¹⁶⁰ put to the Commission, Loyola de Palacio¹⁶¹ stated the following:

¹⁵⁸ See for instance *British Airways/TAT* EGT no. C 326, 11/12/1992 p. 0, *Swissair/Sabena* EGT C 200, 04/08/1995 p. 10, *KLM/Alitalia* EGT no. C 96, 05/04/2000 p. 5, *SAS/Lufthansa* no. L 54, 05/03/1996 p. 28-42, *British Midland/Lufthansa/SAS* EGT no. C 83, 14/03/2001 p. 6-10, *Austrian Airlines/Lufthansa* EGT L 242, 10/09/2002 p. 25-43.

¹⁵⁹ SAS/Lufthansa no. L 54, 05/03/1996 p. 28-42.

¹⁶⁰ Written question E-0089/01 put by Rainer Wieland (PPE-DE) to the Commission on 20 January 2001.

¹⁶¹ EU Commissioner for Transport and Energy Policy.

“The Commission has never found that frequent flyer programmes are, in themselves, in breach of Community competition law. However, in its examination of alliances between airlines the Commission has identified the combining of the frequent flyer programmes operated by the parties to the alliance as a factor making it more difficult for third parties to compete with the parties to the alliance and has proposed remedies to alleviate this effect...”

Further questions have been put to the Commission,¹⁶² and Mario Monti¹⁶³ has replied as follows on its behalf:

“...The Commission has not investigated the Miles and More scheme to which the Honourable Member refers and has not made any statement as to the compliance or otherwise of this or any other Frequent Flyer Programme with Community competition law.”

In addition, Monti has stated the following:

“...it should be noted that the Commission has not yet taken a position as to whether such schemes in themselves are in breach of Community competition law. However in its examination of alliances between airlines, the Commission has identified the combining of the Frequent Flyer Programmes operated by the parties to the alliance as a factor making it more difficult for third parties to compete with the parties to the alliance and has proposed remedies to alleviate this effect.”

At a meeting in November 2001,¹⁶⁴ Joos Stragier¹⁶⁵ outlined his thinking, *inter alia*, on the effects of loyalty programmes.¹⁶⁶ In Stragier’s view, FFPs may constitute a significant barrier to market entry as they work to the advantage of airlines that have large networks and are therefore in a position to offer travellers extensive opportunity for accumulating and using bonus points. In many cases, small and medium-sized carriers cannot offer sufficiently attractive FFPs as their networks are too limited in size.¹⁶⁷

¹⁶² Written question E-4019/00 put by Doris Pack (PPE-DE) to the Commission on 21 December 2000. Reply on 5 March 2001.

¹⁶³ EU Commissioner for Competition Policy.

¹⁶⁴ The European Air Law Association in Zürich, 9 November 2001.

¹⁶⁵ Head of the Transport Unit at the European Commission’s Competition DG.

¹⁶⁶ It should be emphasised that these are Joos Stragier’s own personal views.

¹⁶⁷ OECD Roundtable on airline mergers and alliances, Note by the EC Commission, Oktober 1999, DAFPE/CLP/WD (99) 38.

Stragier stated further that an FFP used by an airline carrier which is in a dominant position at a hub airport in a larger network is clearly attractive to customers as such a network allows travellers (particularly business travellers) to accumulate a larger number of bonus points and to use these points at a larger number of destinations. This presents a barrier for newcomers focusing on passengers travelling on routes between specific airports rather than in a service network.

To sum up, the Commission takes the view that the use of FFPs in combination with a dominant market position or with a partnership in an alliance and additional market factors can have an anti-competitive effect as it represents an entry barrier to new or potential players. The Commission has not hitherto taken a position on whether FFPs in themselves are in breach of Community competition law, but in examining alliances between airlines has found that such programmes aggravate competition and has intervened to alleviate this effect, e.g. in the case of the alliance between SAS and Lufthansa.

6.6 OECD

- In the OECD, frequent flyer programmes have been discussed at seminars on mergers between airlines and airline alliances and at seminars on loyalty/fidelity discounts and rebates.

The OECD is a Paris-based intergovernmental organisation for economic cooperation between 30 member states. It serves as a forum for the exchange of ideas and experience and also performs analyses in all fields relating to the economies and economic development primarily of its members. Organisationally, the OECD is divided into subject areas, or topics.

One such topic is competition. The organisation's Competition Committee consists of representatives of member states' competition authorities and observers from a number of non-OECD countries. The committee, which supplies policy analyses and

formulates recommendations, represents an important global forum for the discussion of competition policy issues.

In October 1999, the Competition Committee held a seminar on mergers between airlines and airline alliances at which the subject of frequent flyer programmes was raised. There, it was argued that FFPs represented an important means of attracting and retaining business travellers, that airlines with large networks stood to gain more from such programmes and that FFPs and alliances alike were potentially anti-competitive.

On 5-6 June 2002, the committee held a seminar on 'loyalty or fidelity discounts and rebates', with the aim of sharing experiences that might help member states to determine the competitive effects of such programmes. In Sweden's contribution, the domestic market was held up as an illustration of the Swedish Competition Authority's position on loyalty discounts and similar practices. Reference was made both to the liberalisation process and to the Market Court's decision in the EuroBonus case.¹⁶⁸ A brief analysis of the use of FFPs in the Swedish domestic market was also presented. The Swedish position on loyalty programmes did not specifically target the air transport sector. Loyalty programmes in general can be viewed as natural features of commercial life and also as important competitive tools, even when provided by dominant undertakings. Loyalty programmes may not, however, be applied in such a way as to limit purchasing from a dominant undertaking's competitors.

The seminar contributions showed that Sweden and Norway take a similar view of FFPs, namely that due to their special design and function they may be detrimental to competition. Both authorities have sought to restrict the use of these programmes in their respective domestic markets. The German competition authority, too, has examined FFPs in a couple of cases,¹⁶⁹ but has not taken

¹⁶⁸ MD 2001:4

¹⁶⁹ The first case, from 1997, concerned abuse of a dominant position. The opposing parties were Lufthansa and Eurowings. The German competition authority ruled that Lufthansa held a dominant position in at least parts of the German domestic market. Discussions with the two parties focused on the possibility of including Eurowings in the Lufthansa FFP, Miles & More, to which Lufthansa agreed. The second case concerned a merger between Lufthansa and Eurowings. The German competition authority made the merger conditional upon certain requirements, including one that involved Lufthansa opening up its FFP to competitors,

any action to limit their use in the same way as its Swedish and Norwegian counterparts. Germany has chosen to open FFPs to incumbent airlines' competitors.

The OECD Competition Committee is an important forum for the exchange of ideas and experience among member states and for the discussion of competition issues. In many OECD countries, competition in the air travel sector is a priority issue. Bearing in mind recent developments in this field, the subject appears likely to take its place on the committee agenda within the not too distant future.

6.7 International organisations in the civil aviation field

6.7.1 Air transport policy organisations

In addition to the efforts of the European Community, much of the work under way to harmonise civil aviation is taking place within the framework of different international organisations, including the ICAO and the ECAC.

ICAO

The ICAO (International Civil Aviation Organisation) was founded on 4 April 1947. In October of that year, the organisation became a specialised agency under United Nations (UN) auspices, attached to the Economic and Social Council (ECOSOC). Those countries that are a party to the Chicago Convention are also members of the organisation. The ICAO has 188 member states, including Sweden, and is an important institution in the civil aviation industry.

Part of the organisation's work is to establish international standards and recommend practices and procedures relating to technical and operational aviation fields. It also issues guidelines concerning customs and passport relief and actively pursues aviation policy issues. The ICAO has a number of Regions and Regional Offices, but will only countenance regional activities that

which Germany viewed as a fully adequate solution to the problems engendered by frequent flyer programmes.

do not conflict with the global activities undertaken by the organisation. Such activities, however, vary between regions to a certain extent, depending on the economic, technical and social circumstances in the individual region. The ICAO expects members to comply with the principles that it has established in the aviation market.

ECAC

The ECAC (European Civil Aviation Conference) was set up by the countries of Europe in 1955 at the initiative of the EU Council and with the active support of the ICAO. At present, member states number 41.

The ECAC is a consultative body uniting European civil aviation administrations and seeking to promote the continued development of a safe, efficient and sustainable European air transport system. It pursues its activities in a number of working groups bringing together experts from the various member states. Sweden is represented in the ECAC by the Swedish CAA. The ECAC issues recommendations that while not binding upon member states are expected to be incorporated into national regulatory frameworks.

JAA

The JAA (Joint Aviation Authorities) was set up in 1970. Countries join by signing a special document (JAA Arrangements). Only ECAC members may join the JAA and the organisation currently has a membership of 36. The JAA is affiliated to and cooperates with the ECAC.

Its principal task is to promote air safety, to achieve a cost effective safety system so as to contribute to an efficient civil aviation industry, and to contribute, through the application of common standards and through regular review of the existing regulatory situation, to fair and equal competition within member states.

Stakeholder organisations, especially those in the airline industry, play an increasingly important role in the ECAC, not least as referral bodies and bodies of experts dealing with technical matters.

6.7.2 Air carrier organisations

IATA

The IATA (International Air Transport Association) was established in Havana, Cuba, in April 1945. The present organisation is the successor to the International Air Traffic Association founded in the Hague in 1919. It is primarily a forum for cooperation between airlines and its principal goal is safe, reliable and secure air services.

In October 1979, the IATA was reorganised and divided into two main divisions. One is concerned with trade and deals with technical, legal and financial matters as well as matters relating to air traffic services. The other division is concerned with the coordination of charges, primarily passenger and freight charges and commissions to travel agents. At present, some 100 members are taking part in the charges coordination programme, among them the largest airlines in the world.

The international civil aviation market is currently more than 100 times as large as in 1945. When the IATA was founded, it had 57 members from 31 nations, mainly in Europe and North America. Today, the organisation has over 230 members from more than 130 nations.

AEA

The AEA (Association of European Airlines) is a non-profit association operated and represented by its members. At present, the organisation has 30 members, all of which are passenger or freight carriers operating scheduled or charter air services, either nationally or internationally. Membership is open to organisations that are registered in, licensed by and based in an ECAC country. Member organisations must also be of a specific minimum size.

The AEA is also charged with representing the interests of its members vis-à-vis EU institutions, the ECAC and any other institutional organisation or association involved in or likely to be involved in issues of interest to AEA members and to individual governments.

A further objective of the AEA is to foster co-operation amongst its members on any matter likely to be of interest to the membership as a whole and permitted by the laws of the countries in which they operate, whilst respecting the independence of action of its individual members.

In addition, the AEA is to collect, analyse and interpret information and carry out research necessitated by the activities it is involved in. Members are to assist the Secretariat in this task.

ERA

ERA (European Regions Airline Association) was set up in 1980 by five airlines. The organisation has since grown considerably and currently represents 260 different undertakings. These include 80 airlines from 19 countries, 45 international and regional airports, 18 aircraft manufacturers and 118 suppliers.

The ERA is the only body representing the interests of the regional air transport industry in Europe. Its duties include influencing regulatory and market conditions, promoting technical cooperation and progress, and seeking public and political endorsement.

7 The consequences of unilateral restrictions from a European viewpoint

- The Swedish domestic air travel market differs from other domestic markets surveyed in Europe, particularly with regard to the extensive concentration of routes to a hub, to the absolute and relative size of the dominant airline carrier and to geographical conditions.
- Airline carriers and stakeholder organisations have not clarified the extent to which a Swedish prohibition on the use of FFPs would affect the international competitiveness of airlines in Sweden operating domestic and international services.
- No firm conclusions may be drawn as to how and to what extent a general prohibition on the use of FFPs in the Swedish domestic market would affect the international competitiveness of airlines operating domestic and international services in Sweden.

Part of the Competition Authority's brief has been to analyse the consequences of imposing unilateral restrictions in Sweden on the use of FFPs on domestic air routes. Presenting its case in the Market Court, SAS argued that the introduction of a blanket prohibition on the EuroBonus scheme in the domestic market would affect the airline's competitiveness on scheduled air transport flights to and from Sweden. It further argued that on journeys involving both a domestic and one or more international routes, the chance of earning bonus points on domestic trips gave travellers an incentive to choose SAS for flights out of Sweden. This incentive

would disappear were it no longer possible to earn EuroBonus points on flights inside Sweden.¹⁷⁰

An important part of the Competition Authority's work on the analysis has been to elicit the views of airlines and stakeholder organisations¹⁷¹ for the purpose of determining both what effects the Market Court's decision has had and what the consequences might be of introducing a Swedish prohibition on FFPs.

7.1 The views of airlines and stakeholder organisations

According to SAS, the Market Court decision placed the carrier at a competitive disadvantage in relation to all comparable airlines. SAS stated that in the wake of the ruling it had observed a slight decline in the influx of members to the EuroBonus scheme, but also noted that the court decision had not had any appreciable effect on competition on routes where SAS or one of its partners operated services.

On the question of whether the balance between SAS and other carriers in the international market had in any way shifted as a result of the court decision, i.e. with regard to passenger distribution between airlines, SAS replied that there "were signs" that the airline had lost competitive ground as a result of no longer being able to award bonus points to domestic travellers, and that this was particularly evident on routes from Landvetter (Göteborg). To illustrate how its international competitiveness had declined, SAS cited the partnership between Nordic Airlink and Finnair, which meant that, unlike SAS, the two airlines were able to offer a uniform product.

Travellers flying with Nordic Airlink on domestic routes in Sweden could, SAS argued, earn points in Finnair's FFP which could then be used for bonus trips abroad with Finnair. Nordic Airlink, however, has only a limited number of flights on the Stockholm-Luleå route in competition with SAS.

¹⁷⁰ MD 2001:4 p. 19. It should be emphasised that this is not covered by the Market Court decision.

¹⁷¹ See Annex 1 and 2.

Asked for its comments on the question of restricting FFPs – partly in terms of which routes and for which carriers and partly concerning the extent to which such programmes might be used – SAS replied as follows:

“SAS is of the opinion that if restrictions on the use of FFPs are to be imposed, this should be done at European level, or preferably at global level. This is not primarily a national issue but a matter for the European Commission or for another supranational body. SAS and other airline carriers operate in the European/global market, and competitive conditions should be the same for all carriers. The present situation in Sweden and Norway is that public authorities and courts have imposed various restrictions on SAS’s use of its FFP, and this naturally discriminates against SAS in relation to its competitors. SAS can accept the imposition of restrictions on the use of FFPs, but these should be applied equally to all parties. However, imposing restrictions on SAS while our principal competitors on both domestic and international flights are free to use their FFPs in full, as has now happened, is unacceptable.”

SAS does not consider that a total ban on FFPs in the Swedish domestic market would in itself be desirable unless such programmes were prohibited throughout the EEA zone. It also feels that if a ban on FFPs were to be introduced within and/or between EEA countries, there is a “major risk” that US and other non-European airlines would gain a competitive advantage over European airlines.

The answers given by SAS to the Competition Authority’s questions do not permit any far-reaching conclusions to be drawn regarding the consequences of the Market Court decision for the airline. On the one hand, SAS claims that it has been placed at a disadvantage (discriminated against), but on the other it does not feel that the ruling has had any appreciable effect on competition on routes where SAS itself or one of its partners operates. Nor do the answers given by SAS contribute to an understanding of the extent to which the airline’s competitiveness has been affected from an international viewpoint. SAS says there “are signs” that the airline has lost competitive ground, especially in Göteborg, and that there is a “major risk” that non-European airlines would benefit from any European prohibition on FFPs.

Malmö Aviation, in its response to the Competition Authority, stresses the importance to the airline, in its role as a minor player in the Swedish market, of retaining the competitive advantage that its

use of an FFP represents, as the programme increases the airline's chances of survival.¹⁷²

The Swedish Aviation Society, representing the Swedish air transport industry, believes that SAS has lost market shares to international competitors such as Air France and KLM on routes from Landvetter. The organisation further believes that in relative terms SAS has been adversely affected in the international market as the value of the EuroBonus scheme has declined in the eyes of customers in Sweden, a development that has benefited other carriers. In the opinion of the Aviation Society, the Swedish domestic market and other domestic markets in Europe are bound up with one another and must be treated equally within the EU. The organisation considers, however, that it should be possible to restrict a dominant market player's use of an FFP if the programme impedes entry. Further, the Aviation Society suggests that a good way of tackling the competitive problems arising out of FFPs is via tax returns, i.e. by making closer checks on travel that represents a taxable benefit.¹⁷³

The Swedish Business Travel Association (SBTA) advocates a total prohibition on FFPs in the Swedish domestic market, regardless of airline, as it feels that such programmes are wrongly structured and distort competition. The SBTA favours the introduction of a total global ban as a means of achieving competitive neutrality but feels that the EU should take steps to eliminate FFPs in and between member states. If it is not possible to introduce a prohibition within a reasonable period of time, the organisation says, the authorities in each respective country should seek to ensure that airlines report bonus points to whoever pays for the ticket.¹⁷⁴

The Swedish CAA takes the view that FFPs are loyalty-inducing and can raise prices as the programmes' power of attraction may

¹⁷² Response of Malmö Aviation to the questions of the Competition Authority. See Annex 1

¹⁷³ Response of the Swedish Aviation Society to the questions of the Competition Authority. See Annex 2.

¹⁷⁴ Response of the SBTA to the questions of the Competition Authority. See Annex 2.

reduce price sensitivity. The organisation expressed its opinion in the following terms:¹⁷⁵

“SAS dominates the domestic market in Sweden and has a highly developed network system at both domestic and international level. This, however, is not unique for Sweden. Virtually every country in the EU is dominated by an airline with network benefits at both domestic and international level: Germany and Lufthansa, France and Air France, Spain and Iberia, Finland and Finnair, etc. In light of the crisis that the air transport sector is currently undergoing, a clearly defined home market is obviously of considerable importance to airline carriers. Home market in this context denotes the range of passengers who live and work in the country in which the airlines concerned are based. A loyal home market is essential to the airlines and one of their means of inducing such loyalty is via an FFP.

The Swedish CAA also stated the following:¹⁷⁶

“The loyalty-inducing and thus anti-competitive effects of FFPs unquestionably increase if the dominant airline enjoys clear network benefits. Also, the fate of frequent flyer programmes is an issue affecting global competition between airline alliances. From a competition viewpoint, therefore, it is important to ensure that all carriers can compete on the same terms.”

As the decision of the Market Court only applies in Sweden, the Swedish CAA believes that SAS’s international competitors may continue to benefit from the use of their FFPs both in their own home markets and ‘in principle’ in SAS’s home market in Sweden as well. According to the Swedish CAA, SAS’s European competitors have been given an unfair competitive advantage over SAS while at the same time competitive opportunities on domestic routes in EU member states would ‘probably’ improve considerably were FFPs to be abolished on competitive routes.¹⁷⁷

7.2 Comparisons between domestic markets in the EU

The decision of the Market Court was based partly on an assessment of competitive conditions in the Swedish domestic

¹⁷⁵ Report from the Swedish CAA: ‘Market Conditions in Domestic Aviation’ (*Inrikesflygets marknadsförutsättningar: Åtgärder för att förbättra konkurrensen*, 2001), (Norrköping 2001), p. 121.

¹⁷⁶ *Ibid.*

¹⁷⁷ *Ibid.* P. 122.

market at the time. Arguably, any Swedish ban on the use of FFPs, too, should be based on an assessment of these conditions and also of the likely consequences for airlines operating domestic and international services in Sweden. Such an assessment could start by comparing the Swedish domestic aviation market with other domestic markets in the EU.

Domestic aviation markets in the EU differ in a number of respects, particularly as regards geographical conditions, size of population and market concentration in each individual country.

Figure 14 Population, number of domestic passengers, passengers per head of population, and proportion of passengers travelling to, from or via the main hub.

	Population (mill.)	No. of domestic passengers (mill.)	Domestic passengers per head of population. (number)	Percentage to/from/via main hub
Finland	5.1	3.0	0.6	96.8
France	58.7	22	0.4	80
Italy	57.6	18.5	0.3	64
Norway	4.4	10.2	2.3	55
Spain	39.3	22.6	0.6	56
Sweden	8.8	7.2	0.8	97.5
UK	59.1	15.6	0.3	73
Germany ¹⁷⁸	82.1	19.9	0.2	40

Sources: Websites of the CAAs (www.ilmailulaitos.fi, www.dgac.fr, www.luffartsverket.no, www.aena.es); www.destatis.de, Airline Business, May 2001, p.44; Airport statistics; ICAO Digest of Statistics, No. 473; UK Airports, July 1998, CAA; CAA 1998; Statistisk Årsbok (Swedish Statistical Yearbook)..

The figure shows that Finland and Sweden differ from the other countries surveyed in that they have the smallest domestic markets

¹⁷⁸ It is assumed here that the number of passengers per head in relation to seating capacity for Germany is equal to the average for Italy, Spain and the UK.

and an extremely high concentration of traffic to routes to and from their capitals. This has to do with the fact that both countries have relatively few inhabitants.

The Norwegian domestic market is approx. 50 per cent larger than the Swedish market and is one of the markets that has the least concentration to the main hub. This may be explained by the geography of the country and by the subsidies granted to traffic on the 'short-route' network. The five largest countries in the EU¹⁷⁹ all have domestic markets that are at least twice the size of the Swedish market. The markets in France and Spain are more than three times the size of the Swedish one. In the five largest countries, air traffic is much less concentrated to the capital city (Frankfurt is the main hub in Germany) than is the case in Sweden.

In a study from 1998, the British Civil Aviation Authority¹⁸⁰ noted that the established national airlines' share of all air traffic in the EU market had fallen from over 80 per cent to less than 70 per cent between 1992 and 1997. In the case of domestic air traffic, market share had declined from approx. 75 per cent to 62 per cent during the same period. The proportion of domestic routes with two competitors had doubled, from 10 to 20 per cent, while the proportion of international routes with three competitors had increased from 4 to 7 per cent. On the busiest international routes, market share had increased from 12 per cent in 1992 to 27 per cent in 1997. The major airlines, however, had gradually taken control of a growing number of regional carriers and other, smaller undertakings, and this had acted as a counterbalance.

In recent years, the dominant airlines in the various domestic markets have managed to recapture market shares in a number of countries, among them Sweden, France and Germany. The table below shows the development of market shares of dominant airlines in eight countries. On average, these airlines controlled 60 per cent of domestic air traffic in their respective countries in 2001, a figure that rises by almost five percentage points if the airline companies' partly-owned or wholly-owned carriers are included.

¹⁷⁹ France, Germany, Italy, Spain and the UK.

¹⁸⁰ CAA, 1998

Figure 15 Dominant airline share in domestic aviation markets, based on seating capacity

	1992	1997	2001
Finland			(88 – 97)
France	95*	72*	85* (79)
Italy	95*	75*	68* (59)
Norway			(51)
Spain	100*	68*	48* (57)
UK	60*	53*	44* (50)
Sweden	(95)	(67)	78* (75 – 89)
Germany	100*	70*	88* (80)

* According to the British CAA (1998), these figures refer to the major domestic airlines in 1992 and 1997. They have been calculated with the aid of OAG statistics for the same routes in 2001.

The figures in brackets denote all routes. The higher figures for Finland and Sweden include Golden Air and Skyways respectively.

The figures for all routes include majority-owned subsidiaries, such as the Norwegian carrier Wideroe, which is owned by SAS. It should be remembered that SAS acquired Braathens at the end of 2001 and that the dominant airline's share of domestic traffic has since increased substantially.

In sum, the dominant carrier in Sweden, SAS, has a relatively high market share on the largest domestic routes. Its market share increases still further if Skyways is included. It should also be noted that the Swedish market is characterised by a small number of domestic passengers and a very high concentration of air traffic to the main hub.

7.3 Summary of conclusions

No firm conclusions can be drawn from the responses of the airline carriers and stakeholder organisations as to the effects of the Market Court decision. Nor is it sufficiently clear how or to what extent a Swedish prohibition on the use of FFPs would affect the international competitiveness of carriers operating domestic and international services in Sweden. The Swedish Aviation society, for instance, contends that SAS has been placed at a competitive

disadvantage in the international market as the EuroBonus scheme has been devalued in the eyes of customers in Sweden. The Swedish CAA takes the view that SAS's European competitors have been given an unfair competitive advantage over the airline and that competitive opportunities in European domestic markets would 'probably' improve considerably were FFPs to be abolished on competitive routes. These claims have not, however, been presented in quantifiable terms.

In an investigation commissioned by the Competition Authority¹⁸¹, Ass. Prof. Jerker Holm of Lund University has analysed how restrictions on the use of FFPs may affect competition. One of Holm's conclusions is that a prohibition in Sweden preventing the country's airline carriers from operating FFPs would place them at a competitive disadvantage. A surface analysis might suggest that this runs counter to the principle of competitive neutrality as such a ban would benefit foreign carriers. However, says Holm, the analysis should also consider what other effects a prohibition might yield. Holm notes that dominant national carriers with historical rights to slots and with extensive networks on their 'home hubs' for international routes may already enjoy such considerable competitive advantages that a prohibition on FFPs would make the market more rather than less 'neutral' as regards opportunities for airline competition.

In Norway, the Norwegian Competition Authority argues that the SAS groups' fears concerning a prohibition are exaggerated. Whether or not its competitiveness diminishes, says the agency, depends largely on the group's own business strategy. Of particular importance, therefore, is whether and how the group intends to reallocate 'earned' domestic points to its international routes. Were the SAS group to distribute bonus points on international routes instead of domestic routes in Norway, adds the Competition Authority, it could increase its points awards on these routes and thus enhance its international competitiveness.

In order to analyse the consequences of a domestic market prohibition, the market's distinguishing features must first be considered. The Swedish domestic market differs from other

¹⁸¹ Holm (2000)

domestic markets surveyed in Europe. All things considered, and based *inter alia* on the responses of the airlines and stakeholder organisations, the Competition Authority is of the opinion that no firm conclusions can be drawn as to how and to what extent a general prohibition on the use of FFPs in the Swedish domestic market might affect the international competitiveness of airlines operating domestic and international services in Sweden.

8 Summary and proposed measures

8.1 Summary

- Frequent flyer programmes (FFPs) are an important competitive instrument that seek to induce loyalty. Bonus points normally accrue to the business traveller personally despite the fact that the employer pays for the trip.
- There is empirical evidence to suggest that the SAS bonus programme has had a market impact in the form of higher ticket prices for SAS travellers. The increase in SAS ticket prices for business travellers compared to other airlines corresponds to approx. 12 per cent of the average ticket price for airlines on competitive routes.
- Switching cost, i.e. the cost to the consumer of switching from one company to another, has increased by around SEK 500 per passenger during the period when the SAS bonus programme was in force. This corresponds to just under 15 per cent of the average ticket price.
- The Market Court ruling of 2001 limits the ways in which SAS may apply its bonus programme. Consequently, the competitive restraints that the programme has imposed on the Swedish domestic market have been reduced. This in turn has made it easier for new airlines to establish services in competition with SAS.
- Since the beginning of 2001, several small airlines have entered the domestic market. They are currently operating on seven routes in competition with SAS or Skyways.
- On the basis of the supporting data it is impossible to state categorically how and to what extent a ban on the use of FFPs in the Swedish domestic aviation market might affect the international competitiveness of companies operating domestic and overseas air services in Sweden.

The mission

In the summer of 2002, the Swedish Government instructed the Swedish Competition Authority to review the effect on competition and on consumers of imposing restrictions on the use of bonus programmes (frequent flyer programmes, FFPs) in the Swedish domestic aviation market, and to present proposals for action. The mandate included surveying the range and application of FFPs and analysing both the impact of such programmes on airlines and travellers and the consequences of introducing unilateral restrictions on FFPs in Sweden. The Swedish Competition Authority was also instructed to describe relevant legislation, investigations and reports in this field, and to propose ways in which Sweden might actively pursue, at international level, the question of limiting the use of FFPs in the aviation sector.

Competition in the Swedish market

Sweden is a large country in geographical terms but has relatively few inhabitants, most of whom live in the central or southern regions. This settlement pattern affects competition. The market is characterised by a hub-and-spoke system with Arlanda (Stockholm) as the only hub. SAS and Skyways are in a strong position at Arlanda. Together they command almost 60 per cent of the airport's departure and arrival times, or 'slots'. At peak times, this share increases still further.¹⁸²

SAS is the predominant airline in Sweden and cooperates extensively with Skyways. Together, these two companies command almost a 90 per cent share of the Swedish domestic aviation market. SAS's principal competitor in the domestic market is Malmö Aviation.

Competition in the domestic air travel market has developed less favourably than was expected when liberalisation was introduced in 1992. Prices fell initially but then rose sharply. Between December 1995 and December 2002, prices for private travel rose by just over

¹⁸² The remaining 40 per cent are distributed among 60-odd airlines, the majority of which operate internationally.

32 per cent in nominal terms, according to Statistics Sweden.¹⁸³ Prices for business travellers rose by 26 per cent in the corresponding period. During the same period, the Swedish Retail Price Index (RPI)¹⁸⁴ rose by just under 8 per cent, i.e. by a considerably smaller margin. The price of domestic air travel, in other words, has increased substantially more than the price level in general.

Since the beginning of 2001, a number of smaller airlines have launched domestic operations. In addition, existing carriers have begun competing on some domestic routes that used to have only one operator. At the beginning of 2003, about a dozen airlines were operating domestic services in Sweden. Of these, only a few were operating heavy jet flights. In addition, the air travel agent Gotlandsflyg was organising flights between Visby and Stockholm. At this time, airlines were competing on six different domestic routes. In mid-February, Kullaflyg¹⁸⁵ announced that it intended operating services in competition with SAS on the Ångelholm-Stockholm route. Should this transpire, operators would be competing on seven domestic routes.

How do FFPs affect competition?

Airlines compete in such areas as price, service levels, departures and frequent flyer programmes. Briefly, FFPs work by members being awarded bonus points for travelling with the airline operating the programme. The main aim of an FFP is to induce customer loyalty. FFPs were introduced in the US in the early 1980s and spread to Europe in the early 1990s.

FFPs can distort incentives in the market, particularly if the person who uses a service is not the one who is paying for it. An employee on a business trip, for instance, can decide to choose the more expensive of two carriers even if the difference in quality between

¹⁸³ Statistics Sweden (SCB) has long been monitoring price trend for private air travel. Since 1996, it has also been monitoring domestic ticket prices for business travellers. The index for business travel is excl. VAT.

¹⁸⁴ The RPI shows average price trend in private domestic consumption as a whole.

¹⁸⁵ Kullaflyg is owned by Gotlandsflyg and other stakeholders.

the services provided by the two companies does not justify such a choice.

If an airline company introduces an FFP, travelling with that company becomes more attractive than travelling with other airlines or using other modes of transport. Willingness to pay for travel with a company operating an FFP can be expected to increase and, all else equal, the company can charge a higher price for its flights. It can also reduce number of departures as willingness to fly with the company has increased. Rival carriers have the incentive to respond to the competitive advantage that an FFP represents by introducing price cuts, increasing their number of departures or raising the quality of their product range, or by other means. How great the effects will be depends on factors such as the extent to which the services of the various carriers are perceived to be interchangeable by the customer and how price-sensitive the customer is. If the services of the various carriers are roughly on a par, the impact on competitive prices will be considerable. The impact on price declines the more price-sensitive customers are.

One factor that has an important bearing on these effects is the switching cost, i.e. the cost to the consumer of switching from one company to another. The size of the cost depends on a number of factors, such as the absolute and relative size of the carrier, its number of departures and the departures of its competitors, the location of airports used by the carriers, and the presence of frequent flyer programmes. FFPs contribute to the switching cost by providing customers with a stronger incentive to choose the same airline more than once, which pushes up the cost to the customer of switching companies. At the same time, competitors find it harder to attract customers from the airline concerned. There is theoretical evidence to suggest that switching costs may result in substantial welfare losses and higher prices. These costs may also impede market entry and thus limit competition.

In many respects, an airline such as SAS, which has a relatively wide range of services, is better able to offer an attractive FFP than a carrier with a smaller range. One indication of this is the fact that a large company can offer an extensive range of bonus travel, which means the traveller places greater value on that company's FFP. Probably, the traveller can also earn enough points for a free trip if the company offers a wide range of routes and departures. Travellers may also consider the risk of their bonuses not being

redeemed and decide that a large airline is less likely to go bankrupt than a small, recently established company. The greater the likelihood of a company going bankrupt, the less interest travellers show in its FFP, which means that large carriers have an advantage over small ones.

The SAS bonus programme and the Market Court decision

SAS introduced its EuroBonus loyalty programme for domestic air travel in May 1997. In 1998, the Swedish Competition Authority launched an inquiry based on the suspicion that SAS, by applying the scheme, was in breach of Section 19 of the Competition Act prohibiting abuse by any undertaking of a dominant market position. In a decision dated 12 December 1999, the Competition Authority found that SAS had abused its dominant position by applying its EuroBonus programme for domestic flights, as this made it harder for other carriers to start or maintain competitive services on domestic routes. The Authority's decision meant that SAS was no longer permitted to operate its FFP in such a way that points or the equivalent for the redemption of bonus awards could be earned on domestic flights. SAS appealed the decision to the Market Court.

In a ruling in 2001, the Market Court ordered SAS to cease applying its EuroBonus programme in such a way that domestic travellers could earn points or the equivalent for the redemption of bonus awards on routes where SAS was in competition with other carriers. The court decision did not, however, prevent SAS from applying its EuroBonus programme on domestic flights where it is the only operator.

The Market Court stated when delivering its opinion that frequent flyer programmes unquestionably had a loyalty-inducing effect as their very purpose was to give travellers an incentive to use the services of the company concerned. FFPs may distort market incentives, particularly when the person travelling is not the one who is paying.

The Market Court stated further that the EuroBonus scheme's loyalty-inducing effect could be intended as a means of influencing price formation by reducing customers' sensitivity to price. It also

noted that application of the programme had a price-raising effect, although this could not be calculated in precise terms.

The effects of FFPs on the Swedish market

The Swedish Competition Authority has commissioned an empirical study of the domestic aviation market in Sweden for the purpose of measuring the effects of FFPs on prices, departures and switching costs. The analysis encountered a problem of method in that the introduction of restrictions on the SAS EuroBonus programme in 2001 coincided with the decline in air travel that followed the events of 11 September in the US that year. This has made it difficult to separate the two effects. The analysis focuses, therefore, on a comparison between the period of time when SAS operated its FFP on competitive routes and the period when it did not, and extends from 1992 to the third quarter of 2002.¹⁸⁶

The estimated models show that FFP presence – on competitive routes – led to higher SAS ticket prices (list prices) both in relation to other companies and in relation to periods when no FFP was in place. The increase in SAS ticket price for business travellers compared to other airlines corresponds to 12 per cent of the average ticket price. The increase in SAS ticket price compared to periods when no FFP applied amounts to approx. 8 per cent of the average ticket price for the airlines. The results also show that the SAS EuroBonus programme has a significant impact on switching costs. According to the estimations, switching costs for SAS business travellers increased by around SEK 500 per passenger during the period when the EuroBonus scheme was in place, which corresponds to just under 15 per cent of the average ticket price on competitive routes.

This means that a business traveller subscribing to the EuroBonus scheme and travelling with SAS would require around SEK 500 per

¹⁸⁶ The analysis is further based on price information from the carriers' timetables, i.e. their list prices. No other price information has been available. In order to reduce the risk of error in the analysis, the most flexible ticket has been used, i.e. the ticket with the least number of restrictions attached to its use. This approach was used partly to make the comparisons between companies as simple as possible and partly to allow for comparisons between a company's prices over time. As it is largely business travellers who purchase this type of ticket, and other flexible but expensive tickets, the choice of approach means that the analysis focused on business travellers.

trip to choose a carrier other than SAS were the two airlines equal in all other respects. This is a part of the switching cost. According to the empirical analysis, the total switching cost for business travellers flying with SAS might – on average for all competitive routes – be as high as SEK 2,400 per passenger. This sum is probably excessive as the highest ticket price was used for the estimations, but it nevertheless indicates that the total switching cost for people travelling with SAS is substantial. The average total switching cost as a proportion of the average ticket price amounts to almost 70 per cent. If actual prices were, say, 50 per cent lower than those used in the estimations, the switching cost for SAS business travellers would also be 50 per cent lower, i.e. in this case almost SEK 1,200 per passenger.¹⁸⁷

All in all, it is clear that the presence of the SAS EuroBonus programme has had a market impact, partly in the form of higher SAS ticket prices and reduced ticket prices for competing airlines and partly as a result of higher switching costs for SAS travellers. As SAS is the largest carrier on most competitive routes, FFP presence has entailed higher ticket prices for a large proportion of travellers. Since the price of the most flexible ticket – the one normally purchased by business travellers – was used in the empirical study, estimates have mainly focused on the effects for this category of travellers. Switching costs restrain competition by making it more difficult for other competitors to attract customers. There is much to support the view that SAS's use of the EuroBonus scheme has had an anti-competitive effect resulting in welfare losses for all travellers, in both private and business segments, due to such factors as the presence of fewer market players.

The above suggests that the use of FFPs in the Swedish domestic aviation market has imposed restraints on competition, particularly when such programmes are applied by an airline with a dominant market position. The Market Court's decision restricts SAS's application of its EuroBonus programme. This has limited the anti-competitive effects that the programme has had on the Swedish domestic market, which in turn has made it easier for new carriers to establish services in competition with SAS.

¹⁸⁷ The results of other empirical studies of switching costs, primarily US ones, correspond fairly well to the estimated relative changes in ticket prices and switching costs resulting from FFPs presented above.

On the basis of the supporting data available to the Competition Authority, it is impossible to state categorically how and to what extent a ban on the use of FFPs in the Swedish domestic aviation market might affect the international competitiveness of companies operating domestic and overseas air services in Sweden.

8.2 Proposed measures

- The Swedish Competition Authority advises the Government against adopting any stringent measures such as legislation.
- The Competition Authority proposes that the Government give the Swedish Civil Aviation Administration greater powers to gather airline information on prices and passengers etc.
- The Competition Authority urges employers, not least in the public sector, to review their procedures regarding employees' choice of airline.
- Sweden should press for a harmonised Community approach to the issue of FFP impact on competition. The Competition Authority pursues FFP issues within the framework of the European Competition Authorities (ECA) and will submit its report to ECA members.

8.2.1 Special legislation to supplement the Competition Act?

As part of its brief, the Swedish Competition Authority is required to present proposals concerning possible restrictions on the use of frequent flyer programmes in the Swedish domestic aviation market. The Competition Authority has acted against the SAS's application of its EuroBonus programme, based on the rules prohibiting abuse of a dominant market position under the Competition Act. More stringent measures of a permanent nature would probably necessitate some form of special legislation.

The provisions of the Competition Act relating to abuse of a dominant market position are asymmetrical, i.e. different rules apply depending on the market strength of the undertaking concerned. What is forbidden in the case of a company with a dominant position may be permitted in the case of a company in a lesser position. Action under Section 19 of the Competition Act may only be taken in respect of a dominant player's behaviour in the marketplace.

In some markets, carefully-framed special legislation may be a valuable supplement to the Competition Act in pursuit of efficient competition. A range of legislative measures are already in place in the aviation field that might be described as special laws, both at national level and in the EU. These include the EU regulations on tariffs and slots allocation.¹⁸⁸ A special law on FFPs, if such were considered, might be framed in a number of different ways, ranging from a total ban on all use of FFPs to permitting FFPs to be used while at the same time ensuring that competitors are given access to them.

Total ban

The most interventionary measure would be the introduction of a total ban, i.e. a general embargo on the use of FFPs in Sweden by all players in the aviation market, regardless of whether they occupy a dominant position or not. The Swedish Civil Aviation Administration has recommended a total ban on FFPs for all airlines operating in the Swedish domestic market.

The airlines would find it easier to accept a ban that extended to the market as a whole, i.e. one that applied not just to a specific dominant carrier or a specific FFP but to all existing and new scheduled air traffic between destinations in Sweden. A total ban would leave no room for misinterpretation.

The 2001 decision by the Market Court was based on Section 19 of the Competition Act which stipulates different rules for undertakings depending on their market strength. A total ban on FFPs in Sweden would mean forfeiting the advantages afforded by

¹⁸⁸ See Chapter 4.

an asymmetrical judicial application of the law as prescribed by the Competition Act, and would also mean a smaller airline losing a competitive advantage vis-à-vis the dominant company. Also, companies with FFPs would lose a marketing tool.

Partial ban

One alternative to a total ban is a partial ban, i.e. allowing carriers to use FFPs subject to certain limitations. Such a ban might be directed either at a dominant company or at the way in which an FFP is applied.

A partial ban directed at a dominant company might be formulated in such a way that the company is forced to limit its use of the FFP. The ban would be applied to all airlines that achieved a dominant market position. Thus a company achieving a dominant position in the Swedish domestic market would be prohibited from applying its FFP.

A partial ban would be in line with the provisions of the Competition Act concerning abuse of a dominant market position. These provisions address situations that place small companies in particular at a competitive disadvantage. A partial ban would give small and medium-sized enterprises the opportunity to use their FFPs as a competitive instrument.

One of the disadvantages of a partial ban directed at a dominant company, as compared with a total ban, is that it creates greater uncertainty. It is difficult for a company to determine when it has achieved a dominant position, especially in rapidly developing markets.

A partial ban could also be directed at a specific application of the FFP. Such a ban could be formulated in such a way that it only prohibits the practice of awarding points or the equivalent for the redemption of bonus offers, while still allowing the award of points that can be used to procure a higher level of service. If allowed, however, the latter points category would still have a loyalty-inducing effect to some extent. Another way of formulating a ban on specific applications of FFPs would be to confine it to certain routes, e.g. competitive routes. The Norwegian Competition Authority has introduced a ban targeting the dominant company and

extending to all routes and bonus points categories, including service points.

Access

A further alternative would be to allow FFPs to be used in Sweden without constraint while at the same time ensuring that airlines which are not a party to an FFP are given access to an existing programme on non-discriminatory and transparent terms. If all carriers take part in the same or similar FFPs, the competitive advantage of having such a programme is diminished. The European Commission has urged airlines cooperating in an alliance to open up their loyalty programmes to new companies that do not have FFPs of their own or are already members of another programme.

A factor that may deter a company from joining an FFP is the commercial risk involved as a result of the managing company gaining insight into the newcomer's list of customers. Membership may also lead to the newcomer marketing rival brands. Efforts should be made, therefore, to develop some form of code of conduct for companies managing FFPs. Such a code should prescribe certain rules of procedure with regard to matters like the handling of customer lists and access to such lists. A code of conduct in this field might be based on the one already applied in the field of computer reservation systems (CRS). One of the provisions of the CRS code is that a system is only acceptable if it used in a fair and non-discriminatory fashion.

In sum, there are arguments in favour of introducing special legislation on FFPs. However, the Swedish Competition Authority considers the Competition Act to be sufficient for solving problems relating to market detriment due to the use of an FFP by a dominant airline. The Authority therefore advises the Government against adopting any stringent measures such as legislation.

8.2.2 Proposals

The Competition Authority is partly dependent for its market analyses on the Swedish CAA in its capacity as the sectoral authority for the aviation field. To enable it to improve the quality

of its analyses, the CAA should be given additional powers to gather and compile the necessary data on such factors as price per carrier and route and price per traveller category. At present, price information to the CAA is confined to list prices published by the carriers themselves, and the agency is to a great extent dependent on their willingness to supply information in this area.

One way of reducing the anti-competitive impact of FFPs is to take steps to ensure that companies and organisations review procedures for their employees' business travel. Another way is via legislation, primarily in the tax field.

Travel policies

Business trips make up a large share of air travel. When such journeys are undertaken, it is the employee (business traveller) who travels while the employer pays. Employers are able – to varying extents, depending on the nature of their operation – to influence the way in which business travellers travel. Employers do not, however, have any insight into business travellers' participation in FFPs or their use of bonus points.

When making travel choices, many business travellers can be expected to have both their own interests and the economic interests of the employer at heart. The extent to which a business traveller takes company costs into consideration is individual and also depends on what travel policy the company applies. When companies and organisations have clear-cut travel policies and procedures covering both employee travel and participation in frequent flyer programmes, their employees may be less likely to choose an airline on the basis of FFP presence.

The Swedish Business Travel Association (SBTA) is of the opinion that business travellers are greatly influenced by FFP presence when choosing which airline to fly with. It estimates that 90 per cent of business travellers base their choices on the availability of an FFP if their employer's travel policy allows them to take part in such a programme, and 25 per cent do so even if the employer's travel policy does not permit such a course.

Business travel is paid for by the employer. It is therefore in the employer's interests to introduce travel policies whereby employees

choose the travel alternative that is most beneficial to the company. Better travel policies would make airlines more interested in offering tickets that do not carry bonus points, at a lower cost to the employer concerned. This would reduce company costs for business travel.

Even if travel policies were to improve, business travellers are still likely to be influenced by FFPs to a certain extent, as in many cases employers find it difficult to influence their employees' choice of travel alternatives and to check on the use of bonus points.

8.2.3 International means of pursuing FFP issues

As described above there are many international organisations and forums in which experts from national competition authorities deal with competitive issues, i.e. in the aviation industry. The Swedish Competition Authority should work proactively to bring FFP issues onto the agenda.

The Competition Authority has continuous bilateral contact with competition authorities in countries sharing a similar approach to FFPs, in particular the Scandinavian countries.

Sweden should press for a harmonised Community approach to the issue of FFP impact on competition. The Competition Authority pursues FFP issues within the framework of the European Competition Authorities (ECA), the informal network uniting national competition agencies in the EU, and will submit its report to the ECA members. FFPs are one of the competitive problems to be faced.

The Competition Authority will also urge the Commission's Competition DG to conduct a study at Community level of the effects of FFPs on competition, particularly their effect on airline companies' ticket prices. The Competition Authority will also propose that Sweden contribute to the performance such a study in cooperation with the Commission's Transport DG. Such a study would represent an important contribution to the ongoing review of the EC aviation framework.

Sweden should also investigate the possibility of raising FFP issues in various aviation organisations in which the country is

represented, such as the ECAC and ICAO. The ECAC/EU Dialogue meeting on the economic situation of the European airline industry in October 2003 could discuss the prospects for raising the issue of FFPs as a component in airline company costs.

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Annex

Econometric study of the consequences of introducing and restricting FFPs on domestic air routes

by Fredrik Carlsson¹⁸⁹

1 Introduction

The purpose of this study is to examine the consequences both of introducing frequent flyer programmes on domestic air routes and of restricting their use on such routes. In May 1997, SAS introduced its FFP, the EuroBonus programme, in the Swedish domestic market. Briefly, the function of an FFP is to reward members of the programme with bonus points for travelling with the airline or airlines concerned.¹⁹⁰ These points can be saved for a relatively long period of time and then be used for free bonus travel. Members who save enough points over a given period are upgraded to a higher benefit level. Potentially, an FFP can affect a market in a number of ways, for instance by influencing prices and the range of products, and can thus impact on consumer welfare as well.¹⁹¹

The economic literature in this field includes studies of the effects of FFPs on such factors as competitive conditions, switching costs and travellers' willingness to pay, and of travellers' choice of airline (see Cairns & Galbraith, 1990; Morrison & Winston, 1995;

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¹⁹⁰ Other types of consumption, too, such as hotel bookings, may be rewarded with bonus points.

¹⁹¹ FFPs also affect the consumer directly. Consumers are rewarded with free bonus travel, for instance, if they are loyal to a certain airline company. There may also be advantages deriving from a membership status upgrade. Besides direct advantages such as priority at check-in and access to special lounges, there may be an indirect increase in personal benefit in that the higher status makes the person concerned feel special.

Nako, 1992; Prousalaglou & Kopelman, 1999; Storm, 1999; and others). In the present study, we consider the effects of FFPs on price, number of departures and switching cost. All three of these variables may be regarded as important to consumer welfare, but it should be noted that we do not quantify all the potential welfare effects of frequent flyer programmes.

2 Prices, departures and switching costs

Put simply, we study the impact of FFPs on airlines prices, number of departures and switching costs by comparing the levels of these three variables when SAS's EuroBonus programme is in place with the levels of these variables when it is not.¹⁹² The period under review is January 1992 to September 2002. The Swedish CAA has provided information concerning the number of passengers, arrivals/departures and the number of available seats per airline, on a monthly basis. All domestic routes of any size are included in the study, and these are specified in Table A1 in the annex.¹⁹³

Regarding ticket prices, we would have preferred to have access to data on actual prices. This information is not, however, available, and the analysis is based therefore on price information taken from airline timetables. This can cause problems. In many cases, airlines apply a relatively advanced form of price discrimination and many price lists contain a wide variety of tickets. In order to reduce the risk of error in the analysis, we have chosen to use the most flexible ticket, i.e. the one with the least number of restrictions attached to its use. We did so partly in order to make comparisons between airlines as straightforward as possible and partly so as to be able to compare an airline's prices over time. This kind of analysis is based on the assumption that the margin of error when using list prices is approximately the same for all airlines, i.e. that even if a partially incorrect price is used, the percentage deviation from this price is not dependent on which airline is being analysed. As it is mainly business travellers who purchase this type of ticket, and other

¹⁹² SAS introduced its EuroBonus scheme on domestic routes in May 1997. The Market Court's ruling imposing restrictions on SAS's use of this FFP on the domestic market entered into force on 27 October 2001.

¹⁹³ We also received data concerning two routes for which no price details are available: Malmö-Västerås and Göteborg-Sundsvall. These routes are not, therefore, included in the study.

flexible but expensive tickets, the analysis will focus on travellers in the business category.

The next problem is eliciting adequate information about list prices. The Swedish CAA supplied us with timetables for SAS (and associated regional airlines), Transwede, Braathens and Malmö Aviation. In the case of certain airlines, however, the material contained a number of gaps. Consequently, some of the carriers, primarily those still present in the market, were asked for information about the missing list prices. A number of them, however, could only provide information from the latter part of the period under review. It should be noted, therefore, that there are a number of gaps in the data material where information concerning list prices has not been available. All analysis has been carried out on a quarterly basis, primarily because the price information used tends to remain constant over a lengthy period of time due to the fact that it is taken from timetables.¹⁹⁴ In the following two sections, we describe how the effects of FFPs are to be analysed.

2.1 Prices and number of departures

Applying regression analysis, prices and number of departures respectively will be estimated as a function of a number of independent variables. These functions will be estimated so as to enable us to distinguish the effects of FFPs from changes in other variables. The choice of independent variables is based both on theoretical models focusing on air transport supply and demand and on previous empirical studies (e.g. Agarwal & Talley, 1985; Alamdari & Black, 1992; Borenstein, 1992; Carlsson, 2002; Marin, 1995; Morrison & Winston, 1995; Olson & Trapani, 1981; Proussaloglou & Koppelman, 1995; Schipper, Nijkamp & Rietveld, 2002; Trapani & Olson), but has been limited by the lack of data in some respects.

It should be noted that the presence of an FFP does not necessarily impact on airlines' ticket prices and number of departures, nor is it immediately apparent what effect such a programme might have. In the first place, whether the presence of an FFP affects travel choices

¹⁹⁴ In theory, it is still possible to study prices on a monthly basis, but as the price variable would then show only a limited variation there is a risk that the estimate for this specific variable would pose problems.

and choice of airline is an empirical question. Secondly, given that it does affect travellers' choices it is not clear what impact this has on ticket prices and number of departures in equilibrium. An airline that introduces an FFP becomes more attractive to travellers than another airline or another mode of transport. Willingness to pay to travel with an airline that has an FFP should therefore increase, and, all else equal, that airline can charge a higher ticket price.

Competitors, on the other hand, have an incentive to lower their ticket prices in response to the competitive challenge that the FFP represents. The extent of this effect depends on the degree of substitution between the airlines' products and on the customers' price sensitivity. If the competing airlines' products are otherwise close substitutes, there will be a major impact on price. There are a number of factors which in turn affect degree of substitution and price sensitivity, including the nature of other products offered by the airline and the presence of rules concerning business travel purchases. It is reasonable to suppose, for instance, that two airlines operating at the same airport are closer substitutes than two airlines operating from different airports (on the same route).

Nor is ticket price the only competitive instrument at the disposal of airlines. It is perfectly possible for competing airlines to alter their supply of products in response to an FFP, e.g. by increasing the number of departures or raising product quality instead of cutting ticket prices. Besides any direct effects that FFPs may have on number of departures, and resultant price changes, such a programme may also affect departures in other ways.

An airline that does not have a frequent flyer programme can choose to increase its number of departures in response to the introduction of an FFP by a competitor, and airlines introducing FFPs can reduce their number of departures as willingness to pay to travel with them has increased. The above discussion illustrates the fact that it is not immediately apparent what effects an FFP will have, even from a theoretical viewpoint. Therefore, examining the question empirically by studying what has actually happened in a market where an FFP has been introduced is a matter of urgent interest.

The dependent variable in the price function is real price (2001 prices) of a ticket per kilometre, P_{ijt} , for airlines on route j during the period t .¹⁹⁵ We make no direct distinction between flights from the two Stockholm airports, Arlanda and Bromm, i.e. departures from these two airports to, say, Landvetter (Gothenburg) are treated as a single route. Two other variables that are specific for these routes are included, however: distance and airline (SAS). We assume that price per kilometre is a function of the distance between airports (Dis_{ijt}), the airline's seating capacity (Cap_{ijt}), the airline's number of arrivals/departures (Dep_{ijt}) and of competitors' prices (P_{kjt}) and number of arrivals/departures (Dep_{kjt}), the product of the annual population in which the two A regions are located (Pop_j), price (Ptr_{jt}) and travel time (Ttr_{jt}) of competing trains, market concentration, which is measured via the Herfindahl index ($Herf_{jt}$), and the presence of an unrestricted, i.e. pre-Market Court decision, SAS EuroBonus programme (FFP_t).¹⁹⁶ Thus we focus the analysis on SAS's EuroBonus scheme. The hypothesis is that the price per kilometre falls if distance and capacity respectively increase, as it is reasonable to assume that the airline's marginal cost (in terms of passengers) is reduced when distance or seating capacity increase (Dogamis, 1991).

As regards number of departures, the price is expected to increase if the number rises as the total travel cost to the customer is reduced. Total cost is defined here as the sum of monetary costs and time costs. Time cost is in turn assumed to be a function of number of departures, among other factors. Price is also expected to increase if market concentration increases, as it is reasonable to assume that if a dominant player is present, that airline will have greater opportunities for raising prices.¹⁹⁷ Population is included as a

¹⁹⁵ The reason for using price per kilometre is to enable us to compare prices for different routes of different length in a simple way.

¹⁹⁶ This variable consequently assumes value 1 from the second quarter of 1997 up to the third quarter of 2001 inclusive.

¹⁹⁷ See for instance Tirole (1993) and Barla (2000) for a discussion on market concentration, concentration criteria and competition.

measure of demand and is therefore expected to have a positive coefficient.

As regards competition from rail travel, the price of air travel is expected to increase if the price of rail travel increases and if travel time by rail increases. The variable of principal interest, however, is the presence of the SAS frequent flyer programme (FFP_t). The hypothesis is that this variable will show differences in airline prices between periods when the SAS EuroBonus scheme is in place and periods when it is not, adjusted for other differences between these periods.

In order to distinguish the effect of bonus programmes between SAS and other airlines, the model contains an indicator variable that is equal to 1 if the airline is SAS (SAS_{it}), as well as an interaction variable ($SASF_{it}$) that is equal to the product of the two variables SAS_{it} and FFP_t . The former variable is to adjust for any differences in price between SAS and other airlines that have not been provided for by the other variables. The second variable is intended to measure the effect of EuroBonus presence compared with other airlines.

Similarly, we are assuming that the number of arrivals/departures, Av_{ijt} , for airline i on route j during the period t is a function of seating capacity, competitors' prices and number of departures, the airline's price per kilometre of population in the two regions, real (2001 prices) GDP (GDP_t) market concentration and FFP presence. Here, too, an indicator variable is included for SAS and an interaction variable between SAS_{it} and FFP_t . We expect the number of departures to fall if seating capacity increases and to rise if population or GDP increase. As regards competitors' number of departures and market concentration, it is not as clear what coefficient sign we should expect as we have studied the departures of a single airline and not the total number of departures. We will also analyse the total number of departures for each respective route, in the same way as we analyse departures for a single airline.

The Herfindahl index measures market concentration and the extent to which dominant undertakings are present in the market. If there is only one undertaking in a market, the index is equal to 1, and the

lower the level of market concentration, the lower the value of the index. In a given market, the index is equal to the sum of the squared market shares. In the present case, market shares are measured as seating capacity, i.e. the total number of seats available. The reason for this is that we wish to measure the potential share of the market that an airline may have. The index is calculated as:

$$Herf_{jt} = \sum_{i=1}^f \left(\frac{Cap_{ijt}}{\sum_{m=1}^f Cap_{mjt}} \right)^2$$

where f is the number of airlines on one route. Note that departures from Arlanda and Bromma are studied together in the analysis.

The data to be analysed is what is termed panel data, i.e. we have observations over a number of different routes over time. Consequently, we will be estimating what are termed one-way models. This means that separate indicator variables will be estimated for each route (α_j and δ_j). The models that are to be estimated for price and number of departures respectively may therefore be expressed as follows:

$$P_{ijt} = f(Dis_{ij}, Cap_{ijt}, Dep_{ijt}, Dep_{kjt}, P_{kjt}, Pop_j, Ptr_{jt}, Ttr_{jt}, Herf_{jt}, FFP_t, SAS_{it}, SASF_{it}) + \alpha_j + \varepsilon_{ijt}; k \neq i$$

$$Dep_{ijt} = f(Cap_{ijt}, Dep_{kjt}, P_{ijt}, P_{kjt}, Pop_j, GDP_t, Herf_{jt}, FFP_t, SAS_{it}, SASF_{it}) + \delta_j + \eta_{ijt}; k \neq i$$

One problem about the above formula is that price is a function of number of departures and number of departures is a function of price. Therefore we have an endogeneity problem when these functions are estimated. We solve this by using the 2SLS ('two-stage least squares') method. Under this procedure, we begin by estimating price and number of departures as functions of all the exogenous variables. The predicted values from these estimations

then replace each respective independent variable in the second stage. For a detailed account of the 2SLS method, see Greene (2000).

The integrated estimation tool Limdep 8.0 has been used to arrive at all the estimations in this report. An implicit assumption in the above formula is that prices and departures for the various airlines are set ‘simultaneously’. This means that an airline sets its prices and its number of departures on the assumption that its competitors do not (in the short term) modify their prices or their number of departures. As we discuss in the next section, one of the reasons for this is that competitor price is the variable that lacks the greatest amount of information. But it is worth noting that price and number of departures are not necessarily decided simultaneously.

Before the various functions can be estimated, we must decide on a functional form. In previous studies of the air transport market, the two forms most commonly used were the linear and log-linear models, although other alternatives are perfectly possible. As choice of functional form may affect the result, estimates for both the linear and the log-linear model are specified. A PE test of functional form is applied to determine which of the two models is to be preferred.¹⁹⁸ Finally, another estimation problem is that the impact of the independent variables may depend on whether an airline is in a monopoly position or not, and both price and number of departures can be expected to differ between routes with and without monopolies. This can be dealt with in a number of different ways, for instance by including an indicator variable that is equal to 1 for those routes on which an airline enjoys a monopoly. Using such an approach, however, differences could be expected to arise in the form of different levels. Instead, therefore, separate functions are estimated for routes where an airline has a monopoly and for competitive routes. This means that a total of five functions are estimated, i.e. two price functions – with and without competition – and two departure functions for individual airlines’ total number of

¹⁹⁸ A PE test involves estimating what are termed artificial regressions, where the difference between (transformed) predicted values in the linear and log-linear models respectively are included. The significance of the coefficients for these differences shows which of the two models is preferable. For a more detailed account of how a PE test is conducted, see Maddala (2001).

departures – with and without competition – plus a function for the total number of departures for competitive routes.

2.2 Switching costs

By ‘switching costs’ we mean the cost to a traveller of switching from one airline to another. This cost depends on a number of factors; in the case of air transport, factors include transit opportunities with the same airline or the location of airports that the airline flies from, but also FFPs. Frequent flyer programmes could be seen as a way of creating switching cost as customers are unable to redeem the points they earn until they have collected a given number of them, while at the same time different service levels are attainable. Customers therefore have an incentive to fly with the same carrier more than once, and thus incur an additional cost if they switch airlines. FFPs are directed primarily at business travellers. FFP switching cost, therefore, is probably higher for this category as business travellers usually do not pay for their tickets themselves, and employers do not always have the time and resources to exercise any great degree of control over their employees’ travel bookings.¹⁹⁹

FFPs and switching costs may have a number of different effects on airline competition. All else equal, customers are willing to pay a premium to travel with a carrier operating an FFP to which they belong (Morrison & Winston 1995, Nako 1992) and this may not only lead to higher prices but also, and not least, make it difficult for competitors to enter markets where the airline concerned is already established (Greenstein, 1993). In the case of the Swedish domestic market, this is of particular interest due to the presence of a large airline, SAS, that could reasonably be described as dominant. Had there been two large carriers with FFPs of a similar type present in the market, switching cost due to FFP presence might not have been substantial. What is particularly interesting about switching cost is that such a criterion encompasses both price and number of passengers, i.e. it could be viewed as a measure of consumer welfare. In that case, higher switching cost is assumed to lead to reduced consumer welfare. While a consumer who does not

¹⁹⁹ Also, employers may prefer to leave travel decisions to their employees. Any bonus points earned in the process may in fact be viewed as an employee benefit – one that in practice is not taxed.

switch airlines is not directly burdened by a switching cost, he/she will be indirectly affected as prices will go up if switching cost rises.

A number of empirical studies have been undertaken for the purpose of measuring switching cost for different products, such as computer purchases (Greenstein, 1993), choice of bank (Kiser, 2002; Sharpe, 1997) and choice of petrol company (Borenstein, 1991).²⁰⁰ The approaches used in these studies are roughly similar to those used to analyse price and number of departures in the present report. In other words, we have examined what effect a certain measure of switching cost may have on price etc. While such an approach is of interest, it cannot measure switching cost directly and is therefore limited in scope. However, comparatively recent literature is available concerning how switching costs can be measured directly (Shy, 2002, Kim, Kliger & Vale, 2001) on the basis of observed data on prices and market shares. This is based on relatively simple models, but the advantage of such models is that they make it possible to estimate switching costs.

Let us begin by illustrating the method with a specific case. It involves only two airlines, where company A has N_A customers to start with and company B has N_B customers. A person who is a customer of company A can, next time round, either continue to purchase from company A, and pay p_A , or switch to company B and pay p_B . If the customer chooses to switch, he/she will incur a cost for this, expressed as S_A . This is what we call the switching cost. The individual benefit to a customer of company A may be expressed as

$$U_A = \begin{cases} -p_A & \text{if the individual remains with Company A} \\ -p_B - S_A & \text{if the individual switches to Company B} \end{cases}$$

We can describe the benefit to an individual who is a customer of company B in a similar fashion. Should company A's price, p_A , then be higher than the sum of B's price, p_B , and A's switching

²⁰⁰ Klemperer (1995) contains a list of reference literature on switching costs.

cost, S_A , ($p_A > p_B + S_A$) the company loses all its customers to company B. If company A's price is lower than B's price minus B's switching cost, ($p_A < p_B - S_B$) A deprives B of all its customers. If company A's price does not fulfil any of the conditions, the company has the same number of customers as before. The same applies to company B. In sum, then, we express A's and B's number of customers thus:

$$n_A = \begin{cases} 0 & \text{om } p_A > p_B + S_A \\ N_A & \text{om } p_B - S_B < p_A < p_B + S_A \\ N_A + N_B & \text{om } p_A < p_B - S_B \end{cases}$$

$$n_B = \begin{cases} 0 & \text{om } p_B > p_A + S_B \\ N_B & \text{om } p_A - S_A < p_B < p_A + S_B \\ N_A + N_B & \text{om } p_B < p_A - S_A \end{cases}$$

The profit for each company is assumed to be $\pi_i = p_i n_i$. If we assume that the companies set their prices so as to maximise profit, there is no Nash-Bertrand equilibrium in prices. Instead, Shy (2002) uses another approach in seeking an equilibrium by imposing a restriction on the way the companies behave in the market.

Equilibrium prices p_A^U and p_B^U meet the condition that neither company undercuts the price of the other if the following applies:

company A sets as high a price as possible for a given p_B^U and n_B^U under the restriction whereby

$$\pi_B^U = p_B^U n_B^U \geq (p_A - S_A)(N_A + N_B)$$

The restriction in this condition means that company B will not find it profitable to set a price that would give it the entire market. It is assumed that the same condition applies for company B with a similar restriction for company A. Given these conditions, it is possible to arrive at a solution for two equilibrium prices. Applying the model to more than two companies now becomes relatively straightforward. If more than two companies are present, it is assumed that all except the smallest will, when pricing, take into account that the smallest company will not undercut their prices. It

is also assumed that the smallest company will take into account that the largest company will not undercut its price. If we have K number of companies, we get

$$N_1 > N_2 > \dots > N_K$$

company I , $i \neq K$, then sets its price under the restriction

$$\pi_K = p_K N_K \geq (p_i - S_i)(N_i + N_K)$$

and company K sets its price under restriction

$$\pi_1 = p_1 N_1 \geq (p_K - S_K)(N_1 + N_K)$$

From the above, we can solve for the following switching cost:

$$S_i = p_i - \frac{N_K}{N_K + N_i} p_K \text{ and } S_K = p_K - \frac{N_1}{N_1 + N_K} p_1$$

As these formulas show, only information concerning prices and market shares are required in order to calculate switching cost. In the case of air transport, switching costs depend on a range of factors such as opportunities for transit travel with the same airline, the location of airports that carriers fly from, and FFPs. In principle, therefore, it should not be possible to attribute a switching cost to FFP presence. We can, however, study how switching costs change when an FFP is introduced, and thereby measure what proportion of the switching cost is due to the FFP. This is explained in section 3.3

2.3 Limitations

The analysis is subject to a number of limitations and potential problems that need describing. One of its major limitations is the fact that the introduction of restrictions on SAS's use of its EuroBonus FFP in 2001 coincided with the general decline that occurred in the air transport market following the events of 11 September that year. This makes it potentially difficult to separate the two effects. Consequently, the analysis will focus on a comparison between the time when the SAS EuroBonus scheme was in place and the time when it was not.

A further aim of the econometric analysis is to make adjustments for other exogenous changes that may affect price and number of departures. As in the case of all econometric studies, the results naturally depend to some extent on the model specifications regarding such factors as which variables are included, choice of functional form and measurement errors.

As noted above, another important limitation in the study is a certain lack of access to relevant price information. The outcome might possibly have been different had more and better information been available. It should be noted, however, that we cannot be sure in which direction the outcome might have changed. Also, as we have noted previously, the analysis is based on the assumption that any errors in the use of list prices would affect all the airlines in approximately the same way, i.e. that even if a partially incorrect price is used, the percentage deviation from this price is not dependent on which airline is being analysed.

3 Results

3.1 Description of data

Table 1 below describes the values of the variables used in the analysis. As mentioned earlier, a total of 11 routes have been included. The information on number of passengers, arrivals/departures and seating capacity was obtained from the Swedish CAA. Price details were taken from the airlines' own price lists. Data concerning travel times and prices for trains was obtained from Nelldal & Troche (2002). Yearly population in the 'A' regions and real GDP data has been taken from Statistics Sweden's database on the Internet (Statistics Sweden, 2002).

In the appendix, we also present the variables, both for competitive and non-competitive routes separately (Table A2-A3) and for each individual route. As the data in Table 1 shows, a relatively large amount of price information is missing. This applies in particular to small airlines and to observations in the early part of the period under review. The gaps are particularly apparent in the case of data concerning competitor price, where a substantial amount of information is lacking, once again referring to small companies. This means that if this particular variable is included as an explanatory variable, a number of the observations will not be valid. As the total number of observations is relatively small, this in

turn would drastically reduce the degrees of freedom. A closer analysis, however, shows that this variable is crucial both to the analysis and to the outcome.²⁰¹ Accordingly, an additional explanatory variable has been incorporated into those estimations that include competitor price. This is an indicator variable that is equal to 1 if information concerning competitor price is missing, while at the same time the competitor price variable assumes the value of 0 for these observations. The indicator variable largely lacks interpretation, but by including it we avoid losing these observations in the analysis, although this does of course reduce the amount of information on which the analysis is based.

Table 1 Description of variables, mean values for all routes.

Variable	Description	Mean value	Standard deviation	Number
<i>Pax</i>	Number of passengers	77705	53570	739
<i>Price</i>	List price per km	8.191	2.289	583
<i>Total price</i>	List price (business fare)	3461	508	583
<i>Price, competitor</i>	Price per km, competitors	7.670	1.967	257
<i>Price unavailable</i>	Indicator variable = 1 if no information available on competitor price	0.49	0.50	506
<i>Departures</i>	Number of departures/arrivals	1120	522	739
<i>Departures, competitors</i>	Number of departures/arrivals, competitors	1286	622	505
<i>Capacity</i>	Number of seats per departure	104.5	31.82	739
<i>Distance</i>	Distance in km between airports	436.5	133.9	739
<i>Number of airlines</i>	Number of airlines with services	1.801	0.660	739
<i>Herfindahl</i>	Herfindahl index	0.582	0.130	506
<i>Highest price, rail</i>	Highest rail fare over 12-month period for competing train route	1103	220	341
<i>Shortest time, rail</i>	Shortest travel time for competing train route (hours)	4.281	1.273	341

²⁰¹ The functions were, for instance, estimated without competitor prices being included (both for the sample as a whole and for the limited sample containing observations for competitor prices) and with competitor prices for the limited sample. A comparison between these estimates showed, *inter alia*, that if competitor prices were not taken into account, FFPs had a greater effect, and that reducing the sample resulted in the FFP having lesser impact. These results may, if desired, be requisitioned from the author.

<i>Population</i>	Sum of the population in the two A regions (10 million)	39917	43207	739
<i>GDP</i>	Real GDP (2001 prices) per quarter (SEKm)	0.448	0.046	739
<i>FFP</i>	Indicator variable = 1 if SAS EuroBonus programme is present with no restriction on use	0.380	0.486	739
<i>SAS</i>	Indicator variable = 1 if SAS	0.602	0.490	739
<i>SASF</i>	Indicator variable = 1 if SAS and FFP present	0.230	0.421	739

No competition is present on 49 per cent of the observed routes. As Table A3 in the appendix shows, it is primarily SAS that operates on monopoly routes in the sample analysed. On non-competitive routes, therefore, we are unable to distinguish between SAS and other airlines. There are few observations with low values on the Herfindahl index, compared with other observations. Therefore, besides the Herfindahl index, we have included an indicator variable that assumes the value of 1 if the index is lower than 0.4. This is only introduced as a means of averting extreme results as regards the coefficient for the Herfindahl index. Note that the sizes of other coefficients are not greatly affected by the inclusion of this variable.

3.2 Ticket price and number of departures

The first results presented in the analysis concern competitive routes. In Tables 2 and 3 we present the estimated price and departure functions for the linear and log-linear models. Note that both models are estimated using the 2SLS method and using indicator variables for routes (not shown). In all the models, standard deviation has been adjusted for heteroscedasticity using White's correction²⁰² (Greene, 2000). The table shows both estimates and P-values for each coefficient.²⁰³

²⁰² Heteroscedasticity is present if the variance of error terms in a regression is not constant. White's correction only makes adjustments for standard deviations. This approach is generally used when heteroscedasticity is suspected but the cause is not clear.

²⁰³ Note that the coefficients cannot be compared directly between models as the functional forms differ. Coefficients in the linear model can be interpreted as marginal effects, i.e. they show the marginal change of the dependent variable (price per kilometre) when there is a

Table 2 2SLS estimates, where the dependent variable is airline list price per kilometre. Competitive routes.

Variable	Linear model		Log-linear model	
	Coefficient	P-value	Coefficient	P-value
Competitor price	0.4432	0.0000		
Price n.a.	3.4441	0.0000	0.8631	0.0000
Departures	0.0031	0.0000		
Depts. comp.	0.0004	0.1040		
Distance	-0.0281	0.0001		
Capacity	-0.0159	0.0012		
Population	0.00007	0.6136		
Ln (Competitor price)			0.4230	0.0000
Ln(Departures)			0.1342	0.0022
Ln(Depts. comp.)			-0.0006	0.9772
Ln(Distance)			-0.9738	0.0000
Ln(Capacity)			-0.2483	0.0000
Ln(Population)			1.2350	0.0000
Herfindahl	0.0152	0.9869	0.1376	0.1603
Low Herfindahl	1.1675	0.0010	0.0812	0.0513
Highest rail fare	0.0005	0.4744	0.0000	0.7775
Shortest rail time	-0.3995	0.0707	-0.0220	0.4297
SAS	-1.6394	0.0000	-0.0700	0.0375
FFP	-0.3487	0.1178	-0.0402	0.0920
SASF	0.9937	0.0000	0.1009	0.0001
PE test:				
(i) $\bar{p} - \exp(\ln \bar{p})$			0.018	0.326
(ii) $\ln \bar{p} - \ln(\bar{p})$	11.80	0.000		
Adjusted R ²	0.81		0.87	
No. of observations	360		360	
No. of routes	8		8	

Both models yield comparatively similar results as regards significance. The PE test of functional form, however, shows that the linear model may be discarded in favour of the log-linear model. The coefficients for distance and capacity are negative and significant, which supports the hypothesis that price per kilometre declines if one of these two variables increases.

marginal change in the independent variable. In the case of the logarithmed independent variables in the log-linear model, the coefficients may be interpreted as elasticities. P-value, finally, is in this case the observed significance of the hypothesis that the coefficient is equal to zero.

The coefficients for number of departures are positive – both for the airline’s own departures and for competitor departures – although the coefficient for competitor departures is non-significant in the log-linear model. As discussed earlier, the number of departures affects the customer’s total travel cost, which includes both monetary costs and time costs. Therefore, we should expect a higher number of departures to lead to a higher price. The coefficient for the Herfindahl index is non-significant in both models. Rail travel time has a significant effect on price in the linear model but not in the log-linear model, while the coefficient for rail fare is non-significant in both models. The estimate for the rail travel time variable, however, does not yield the expected sign as it shows that if the shortest travel time increases, the air fare will decline in price. The variables of principal interest, however, are the three last ones in the table.

The estimated models show that SAS, all else equal, has a lower ticket price than other airlines. Also, according to the estimates the ticket price for airlines other than SAS is lower during periods when the SAS EuroBonus scheme is in place compared with periods when it is not, although the coefficient is non-significant at the 10 per cent level in the linear model and exactly significant at the 10 per cent level in the log-linear model.

A credible interpretation of the negative coefficient is that the other airlines, which do not have a corresponding FFP, reduce their prices in response to the increased competition that an FFP represents. The effect on SAS price, however, is the opposite: its ticket price increases in relation to the other airlines during periods when the EuroBonus scheme is in place.

The sum of the latter two coefficients (FFP and SASF) also shows that SAS price is higher during periods when the EuroBonus scheme is in place compared with periods when it is not.

Table 3 2SLS estimates, where the dependent variable is the number of airline departures. Competitive routes.

Variable	Linear model		Log-linear model	
	<i>Coefficient</i>	<i>P-value</i>	<i>Coefficient</i>	<i>P-value</i>
<i>Price</i>	-240.9	0.0029		
<i>Competitor price</i>	41.49	0.1420		
<i>Price n.a.</i>	351.9	0.1018	0.2102	0.6726
<i>Deps. comp.</i>				
	-0.6386	0.0000		

<i>Capacity</i>	-8.2164	0.0003		
<i>Population</i>	0.0027	0.5530		
<i>GDP</i>	6304	0.0000		
<i>Ln(Price)</i>			-1.3601	0.1330
<i>Ln(Competitor price)</i>			0.0791	0.7482
<i>Ln(Deps. comp.)</i>			-0.2502	0.0061
<i>Ln(Capacity)</i>			-0.9153	0.0006
<i>Ln(Population)</i>			1.1060	0.4087
<i>Ln(GDP)</i>			1.4859	0.0000
<i>Herfindahl</i>	-241.5	0.2991	-0.0930	0.7250
<i>Low Herfindahl</i>	42.50	0.6990	-0.2354	0.0077
<i>SAS</i>	209.5	0.0161	0.4250	0.0000
<i>FFP</i>	187.9	0.0001	0.1359	0.0000
<i>SASF</i>	43.01	0.5716	-0.0300	0.6546

PE test:				
(i) $\overline{av} - \exp(\overline{\ln av})$			0.0002	0.509
(ii) $\overline{\ln av} - \ln(\overline{av})$	924.2	0.000		
Adjusted R ²		0.55		0.71
No. of observations		360		360
No. of routes		8		8

In the case of number of departures, too, the models are similar in terms of significance and coefficient signs. Once again, the PE test shows that the linear model may be discarded in favour of the log-linear model. A higher price leads to fewer departures in both models, although the coefficient is non-significant in the log-linear model. The coefficient for competitor prices is non-significant in both models. Also, number of departures for one airline declines if a competing airline increases its departures. As expected, number of departures also declines if capacity – number of seats per departure – increases. Rather surprisingly, neither population nor market concentration affect an airline's number of departures, while the GDP coefficient is positive and significant. Again, it is the last three variables that are the most interesting.

The results show that, all else equal, SAS has more departures than other airlines. The number of departures during periods when SAS has an unrestricted FFP in place is greater than when it has no FFP in place. Neither of the models, however, shows any significant difference between SAS and other airlines. It is not immediately clear how this should be interpreted. It should be remembered that number of departures does not necessarily increase when an airline introduces an FFP.

The fact that the impact of FFP presence on the number of departures does not differ between airlines may possibly be due to the correlation between FFP presence and a general increase in travel, and to the fact that the models estimated here have not been fully adjusted to take this into account. Another possible explanation is that the other airlines use number of departures as a means of responding to the enhanced competition that an FFP represents. In seeking to determine the impact of FFPs on number of departures, however, we have chosen to supplement the analysis with an examination of whether FFP presence affects the total number of departures on a competitive route.

It is important to note that this part is not directly comparable with the analysis of departures by individual carriers, as a number of observations are missing in the latter study. In order to examine the effect of FFP presence on total number of departures, we estimate functions for this aggregate in the same way as before. Here, though, we do not need to use the 2SLS method when estimating aggregate departures as we assume that this total is not a function of price. We make this assumption for a number of reasons, chief among them being the fact that average price of one form or another does not necessarily affect total departures. Also, it is very difficult to construct a relevant price. The difficulty lies partly in the fact that a very large number of observations are missing and partly in that it is not entirely clear how this price should be constructed, e.g. whether we should calculate an unweighted average price or use some other type of weighting.²⁰⁴

A variable indicating the few cases in which three airlines operate simultaneously, known as a triopoly, is also included as an explanatory variable ($Triop_{ji}$).

²⁰⁴ In making estimations, an unweighted average air fare price has been used as an explanatory variable. So as not to lose too many observations, only existing information was used to calculate an average price. This means, for instance, that if three airlines were operating on a route but price information was only available for two of them, only the price data for these two airlines was used. These estimations, however, caused a number of problems. Firstly, the price variable sign was positive, which runs counter to economic theory. Secondly, the number of routes for which price information was missing was very substantial. It should be noted, however, that in these estimations the FFP coefficient was non-significant.

Table 4 shows the results of the estimates for total number of departures. Both models are estimated with indicator variables for routes (not shown), and standard deviations have been adjusted for heteroscedasticity using White's correction.

Table 4 OLS estimates, where the dependent variable is total number of departures. Competitive routes.

	Linear model		Log-linear model	
	Coefficient	P-value	Coefficient	P-value
<i>Capacity</i>	-7.1781	0.1360		
<i>Population</i>	0.0205	0.0024		
<i>GDP</i>	4157	0.000		
<i>Ln(Capacity)</i>			-0.4743	0.0000
<i>Ln(Population)</i>			-0.6616	0.0688
<i>Ln(GDP)</i>			0.9195	0.0000
<i>Herfindahl</i>	-233.3	0.2604	-0.2766	0.0026
<i>Low Herfindahl</i>	256.2	0.0294	0.0258	0.5198
<i>FFP</i>	75.14	0.1198	0.0417	0.0368
<i>Triop</i>	345.6	0.0006	0.1039	0.0134
PE test:				
(i) $\overline{dep} - \exp(\ln dep)$			0.00008	0.4341
(ii) $\ln dep - \ln(dep)$	3603	0.0000		
Adjusted R ²	0.88		0.88	
No. of observations	240		240	
No. of routes	8		8	

The PE test shows that the linear model may be discarded in favour of the log-linear model. Except for population in the log-linear model, all significant variables have their expected sign. The coefficient for FFP presence is not significant at the 10 per cent level in the linear model but significant in the log-linear model. As the PE test shows that the linear model may be discarded, a credible interpretation of the results is that FFP presence boosts the number of departures.

If we then look at the results for monopoly air routes, the outcome is different in places. Note that the *Distance* variable is excluded as the sample only includes departures from Arlanda. Nor is it possible to include a separate indicator for SAS, as virtually all flights are

undertaken by SAS. Tables 5 and 6 show the estimated price and departure functions for the linear and log-linear models. Both models are estimated by means of the 2SLS method and using indicator variables for routes (not shown). In all models, standard deviations have been adjusted for heteroscedasticity using White's correction (Greene, 2000).

Table 5 2SLS estimates, where the dependent variable is ticket price per kilometre for an airline. Non-competitive routes.

	Linear model		Log-linear model	
	Coefficient	P-value	Coefficient	P-value
<i>Departures</i>	0.0042	0.0000		
<i>Capacity</i>	1.3295	0.0484		
<i>Population</i>	0.0007	0.0009		
<i>Ln(Departures)</i>			0.5382	0.0000
<i>Ln(Capacity)</i>			0.2118	0.0001
<i>Ln(Population)</i>			1.7429	0.0000
<i>Highest rail fare</i>	0.0009	0.0692	0.0000	0.3018
<i>Shortest rail time</i>	-0.6704	0.0001	-0.0723	0.0001
<i>FFP</i>	0.1617	0.1589	0.0044	0.7604
PE test:				
(i) $\bar{p} - \exp(\ln \bar{p})$			-0.187	0.000
(ii) $\ln \bar{p} - \ln(\bar{p})$	22.47	0.000		
Adjusted R ²	0.82		0.80	
No. of observations	222		222	
No. of routes	10		10	

The PE test result does not suggest that either of the models should be discarded in favour of the other. In both models, the outcome regarding the effect of departures on price is the same as for competitive routes, but the capacity coefficient is positive in both models under a monopoly. This is somewhat surprising, and a possible explanation is that the models cannot be estimated using distance as an explanatory variable as distance is perfectly correlated to the indicator variables for routes. As regards FFP presence, neither model shows a significant difference in price. In other words, in the case of non-competitive routes, the presence of an FFP does not appear to have resulted in higher prices.

Table 6 2SLS estimates, where the dependent variable is total number of departures for an airline. Non-competitive routes.

	Linear model		Log-linear model	
	Coefficient	P-value	Coefficient	P-value
Price	-66.15	0.0460		
Capacity	-6.5993	0.0000		
Population	-0.0417	0.1943		
GDP	2521	0.0000		
Ln(Price)			-0.6617	0.0724
Ln(Capacity)			-0.4349	0.0000
Ln(Population)			-0.9955	0.0495
Ln(GDP)			0.9337	0.0000
FFP	143.9	0.0000	0.1362	0.0000
PE test:			0.001	0.000
(i) $\overline{\ln dep} - \exp(\overline{\ln dep})$				
(ii) $\ln \overline{dep} - \ln(\overline{dep})$	2354	0.000		
Adjusted R ²		0.82		0.84
No. of observations		222		222
No. of routes		10		10

Once again, the PE test does not indicate that either of the models is preferable to the other. Regarding number of departures, the two models yield similar results in terms of coefficient signs as for competitive routes. The linear model shows a significant negative price effect on the number of departures, while the effect is non-significant in the log-linear model. Regarding FFP presence, both models show that it has a significant positive effect on the number of departures, i.e. in the case of monopoly routes the total number of departures is higher during periods when the FFP is in place. It is difficult to find a simple explanation for the fact that the total number of departures increases under a monopoly but not under competition. Again, the result may be due to the models not having been fully adjusted to compensate for other exogenous changes. A possible explanation for the increase in the number of departures on monopoly routes, however, is that FFPs boost travel volume and that in the case of SAS, which operates on most of the domestic routes studied here, this has positive network effects.

We can now summarise outcome regarding the direct impact of FFP presence on price and number of departures. This is done by calculating the expected difference in price and number of

departures respectively on the basis of the estimated models, i.e. we calculate the predicted price with and without FFP presence

$$E_{ijt} [P_{ijt} | FFP_t = 1] - E_{ijt} [P_{ijt} | FFP_t = 0],$$

and the predicted number of departures with and without FFP presence

$$E_{ijt} [avg_{ijt} | FFP_t = 1] - E_{ijt} [avg_{ijt} | FFP_t = 0].$$

In the linear models, these effects are directly apparent from the size of the estimated coefficients for the two independent variables FFP and SASF. In the log-linear models, the effect must be calculated. The results of this comparison are summarised in Table 7.

Table 7 Estimated direct effects of FFP presence on price and number of departures. The log-linear model shows the mean value of the estimated individual effects. Significant effects in bold print.

	Competition		Monopoly	
	<i>Price per km</i>		<i>Price per km</i>	
	Linear	Log-linear	Linear	Log-linear
<i>FFP</i>	-0.3487	-0.3166	0.1617	0.0365
<i>SASF</i>	0.9937	0.8523		
	<i>Ticket price (distance = 440)</i>		<i>Ticket price</i>	
	Linear	Log-linear	Linear	Log-linear
<i>FFP</i>	-153.4	-139.3	71	16.06
<i>SASF</i>	437.2	375.0		
	<i>Departures</i>		<i>Departures</i>	
	Linear	Log-linear	Linear	Log-linear
<i>FFP</i>	187.0	179.6	143.9	142.3
<i>SASF</i>	43.01	-36.4		
	<i>Total no. of departures</i>			
	Linear	Log-linear		
<i>FFP</i>	75.14	101.52		

The average distance between airports in the sample is approx. 440 kilometres. This means that on average the estimated ticket price for airlines other than SAS is about SEK 150 lower during periods when the SAS EuroBonus scheme is in place compared with periods when it is not (on competitive routes). In the case of SAS, the estimated ticket price increases in relation to the prices of other

airlines by SEK 375–440 during periods when the EuroBonus scheme is in place.

The model further predicts that SAS price is SEK 225–290 higher during periods when the EuroBonus scheme is in place compared with periods when it is not (on competitive routes). Thus the two models yield similar results concerning the estimated impact of FFP presence on price. The size of this effect depends on which ticket price is used. As the highest price has been used here, the estimated effects may reasonably be viewed as an upper interval.

In both the linear model and the log-linear model, the percentage deviation for FFP effect is the same as the percentage deviation for price. This means that if actual prices are 10 per cent lower than assumed prices, the FFP effects are 10 per cent lower than estimated.²⁰⁵

On competitive routes, the effect on price is considerably less. Also, the coefficients are non-significant. As regards the number of departures, the two models predict very similar effects at airline level. Regarding total number of departures, the FFP coefficient was not significant in the linear model but was positive and significant in the log-linear model. In the case of monopoly routes, the reverse applied: FFP presence has no significant effect on price, while the number of departures increases during periods when an FFP is present.

Finally, in assessing the reliability of the estimated models, we should keep in mind that the estimations for monopoly routes are less reliable than those for competitive routes. In the case of monopoly routes, the PE test does not indicate that either of the two models is preferable to the other, and a number of the coefficients yield unexpected signs.

In the case of competitive routes, the PE test shows that the log-linear model is to be preferred. The two models, however, show similar results, which indicates a certain robustness in the outcome.

²⁰⁵ This in turn implies that if we calculate the proportion of the ticket price that is attributable to the effect, we will find it to be the same as the proportion at a lower ticket price.

3.3 Switching costs

For each airline, switching costs have been calculated for quarters and routes where competition is present. Note that switching costs can only be estimated for routes where price information is available for all airlines. This further reduces the number of observations on which the analysis is based. The table below shows the estimated average switching costs for all routes, divided between the period when the SAS EuroBonus scheme is in place and the period when it is not. The results are shown for the whole period, for the period with the EuroBonus scheme in place and for the period with no scheme in place.

For all routes, SAS is Airline 1. Calculation of the switching cost is based on the ticket price for business travellers and the total number of passengers (quarterly). We would have preferred to use information about the number of business travellers rather than the total number of passengers, but such data is not available. It should be noted, however, that the calculations would be exactly the same if the proportion of business travellers did not differ between airlines. Market shares would then be unchanged and the results would be exactly as in the table below. Based on such an assumption, the results would be the same even if the proportion of business travellers were to change over time.

Table 8 Average switching costs, standard deviations in brackets. For each route, the number of observations for each route is given in brackets in the first column.

Route (obs)	Total period			Period with no FFP			Period with FFP	
	Airline 1	Airline 2	Airline 3	Airline 1	Airline 2	Airline 3	Airline 1	Airline 2
All (116)	2411 (343)	1068 (326)	2390 (63)	2327 (311)	1043 (308)	2390 (63)	2566 (350)	1114 (355)
Land- vetter (27)	2289 (223)	1035 (145)		2175 (193)	1070 (149)		2456 (148)	984 (127)
Luleå (21)	2745 (364)	1017 (234)		2604 (312)	1035 (223)		3094 (229)	974 (276)
Malmö (26)	2305 (218)	1303 (175)	2390 (63)	2198 (178)	1328 (179)	2390 (63)	2451 (184)	1270 (172)
Sunds- vall (17)	2484 (392)	703 (210)		2394 (369)	713 (177)		2907 (143)	655 (380)
Umeå (22)	2307 (346)	1169 (487)		2279 (289)	1045 (414)		2370 (469)	1435 (555)
Öster- sund (3)	2440 (226)	1009 (254)					2440 (226)	1009 (254)

Switching cost is significantly higher for SAS (Airline 1) than for the other airlines. Estimated switching costs are generally high, partly due to the use of the highest ticket price. If a lower price is used for the calculations, the switching cost declines.²⁰⁶ The outcome, therefore, may reasonably be regarded as an upper interval for the switching costs. In order to assess plausibility, the outcome may be interpreted in the following way: switching cost is a measure of the sum a traveller would need to pay to switch airlines. This means, for instance, that a traveller flying with SAS would on average need to pay SEK 2,411 per trip to switch to the smallest company operating on the same route. This sum is probably excessive, due partly to the fact that the highest ticket price has been used in the analysis. A more reasonable approach, therefore, would be to relate the size of the switching cost to the proportion of the ticket price.

We can also see that the switching cost is higher during the period when the SAS EuroBonus scheme is in place than during periods when it is not. The results therefore suggest that FFP presence has a significant and positive effect on switching cost. Note that the effect of FFP on switching cost should be seen as an average effect for all business travellers, as not all business travellers are necessarily members of the EuroBonus scheme. In order to test this more closely, switching cost is estimated for each airline. As above, a panel data model is estimated with separate indicator variables for each route. We can then separate the effect of FFP presence on switching cost from other airline attributes that create switching costs.

As the above table shows, switching cost for the few observations in the analysis involving three airlines is extremely high. The Herfindahl index, too, is much lower for these three observations than for other observations, which is to be expected. Besides the Herfindahl index, therefore, an indicator variable has been included that assumes the value of 1 if the index is lower than 0.4. This is only introduced as a means of averting extreme results for the Herfindahl index coefficient. Note that the sizes of other

²⁰⁶ If the percentage deviation between the price used and the actual price is the same for all airlines, this means that the percentage deviation between the estimated switching cost and the actual switching cost is the same as the deviation for price. If actual prices were 20 per cent lower than those used in the estimated model, actual switching costs would be 20 per cent lower than the estimated costs.

coefficients are not greatly affected by the inclusion of this variable. Besides the Herfindahl index and the indicator variables for the routes, it is reasonable to assume that the number of departures affects switching cost.

In addition, we include an indicator variable for SAS and one for departures from Bromma Airport, i.e. if the airline operates principally out of Bromma this variable assumes the value of 1. Finally, as before, we include a variable that is equal to 1 if the EuroBonus scheme is in place and an interaction variable between this variable and the SAS variable. Table 9 shows the outcome for estimated switching cost. Again, the standard deviations have been adjusted for heteroscedasticity using White's correction, and besides the variables shown, separate indicator variables have been estimated for each route.

Table 9 Estimated switching cost, where the dependent variable is the switching cost in SEK per passenger.

	Coefficient	P-value
<i>Ln(Departures)</i>	653.9	0.0000
<i>Ln(Deps. comp.)</i>	-958.8	0.0000
<i>Herfindahl</i>	-4.74	0.9961
<i>Low Herfindahl</i>	854.1	0.0032
<i>SAS</i>	512.6	0.0000
<i>FFP</i>	-70.42	0.1343
<i>SASF</i>	487.1	0.0000
<i>Bromma</i>	204.4	0.0095
Adjusted R ²		0.86
No. of observations		235
No. of routes		6

The number of departures has a major impact on switching cost, as can be expected. If an airline increases its departures, it is reasonable to expect switching cost to increase as, all else equal, the advantage of flying with the airline concerned has increased. By the same token, switching cost for an airline is reduced if a competitor increases its number of departures. Switching cost for SAS travellers is higher than for other airlines. However, all else equal, switching cost for departures from Bromma Airport is higher than switching cost for departures from Arlanda.

For airlines other than SAS, FFP presence has no significant effect on switching cost. For SAS, switching cost increases significantly during the period when the EuroBonus scheme is in place. The estimated model shows that the switching cost for SAS increases by almost SEK 490 per passenger during this period.

4 Discussion and comparison with previous studies

The results that are of prime interest to us are the effects of FFP presence on ticket price and switching cost. In order to compare these results with other studies of the effects of FFPs, it is worth relating the effects to ticket price. As mentioned earlier, the proportion of the ticket price is not affected by assumptions concerning the ticket price level (even if the absolute level is changed), assuming that the percentage deviation between actual and assumed ticket price is the same for all airlines. The average list price for competitive routes is almost SEK 3,400 and for monopoly routes SEK 3,600.²⁰⁷ The list price used in the study is, as we noted earlier, the highest price.

The absolute size of the effect of FFP presence, for example, depends on which ticket price is used. The average price for business travellers is lower than the list price we have used, and the absolute effect is accordingly less than the estimated one. However, the standard deviation for FFP presence, for example, is the same as the percentage deviation for price.

This implies that if we calculate the proportion of the ticket price that is attributable to the FFP effect, we will find it to be the same as the proportion at a lower ticket price. For this reason, it is sensible to focus our interpretation of the results on the proportion of the ticket price. We should keep in mind that there are certain problems associated with the estimated models for monopoly, such as which functional form to choose, while the estimated models for competitive routes are more reliable. The estimated models yield the following results for monopoly routes.

- FFP presence has no significant effect on ticket price.

²⁰⁷ The average SAS price on competitive routes is also approx. SEK 3,400.

- FFP presence results in an increase in the number of departures. This increase corresponds to approx. 13 per cent of the average number of departures on monopoly routes. Almost all monopoly routes in our sample are operated by SAS. This suggests that the results may be taken to mean that the number of departures for SAS increases on routes where SAS enjoys a monopoly.
- For competitive routes, which are the routes of prime interest to us, the estimates show that
 - FFP presence entails a higher list price for SAS compared with other airlines and compared with periods during which no FFP is present. The increase in the SAS ticket price, compared with the prices of the other airlines, is approx. 11-13 per cent of the average ticket price.
 - FFP presence may have entailed a lower list price for airlines other than SAS. The effect is significant in one of the estimated models. The decline in price corresponds to approx. 4 per cent of the average ticket price.
 - FFP presence entails a larger number of departures for both SAS and the other airlines, and thus a larger number of departures overall.
 - The increase in switching cost for SAS travellers during the period when the EuroBonus scheme is in place corresponds to almost 15 per cent of the average ticket price. Switching cost for the other airlines is not affected by FFP presence.

Thus, according to the estimated models, FFP presence does affect market relations, but principally on competitive routes. As discussed earlier, the results for competitive routes are robust as regards model specification, and the coefficient signs are as expected. This is not the case for monopoly routes.

Previous studies of the effects of FFPs have all analysed choice of airline on the basis either of actual travel (e.g. Morrison & Winston, 1989) or of data from questionnaires where potential travellers made hypothetical choices between airlines (e.g. Prousaloglou & Koppelman, 1999).

All the above studies were carried out on the basis of data from domestic travel in the US. In these studies, travellers' choices of airline are explained in terms of the features characterising the various airlines and of traveller characteristics. As the models are based on the formulation of an underlying benefit to the traveller, it becomes possible, based on the estimated models, to calculate travellers' willingness to pay (WTP) for different features.

Proussaloglou & Koppelman (1991) conclude that business travellers who fly frequently attach a value of USD 72 to their membership of an FFP, while the average value for all business travellers is USD 52. These valuations correspond to approx. 11 per cent and 8 per cent respectively of the normal prices of business tickets. Nako (1992) estimates average WTP for membership of an FFP to USD 52.5 in the case of an airline with a 30 per cent market share. This corresponds to approx. 10 per cent of the average ticket price.

The Morrison & Winston (1989) study unfortunately does not provide any details of average ticket price, which makes it difficult to compare results. According to Nako (1992), however, the results in Morrison & Winston are similar to those estimated by Nako. These correspond fairly closely to the results we have obtained for switching cost as a proportion of ticket price.

While a change in WTP may not result in exactly the same change in the equilibrium price, the estimated changes in ticket price nevertheless appear to correspond relatively closely to these results. This, then, is a further indication of the plausibility of the results for competitive routes. A reasonable interpretation of the results, therefore, is that FFP presence has had a market impact, partly in the form of increased list prices for SAS and reduced list prices for its competitors, and partly due to a higher switching cost for SAS travellers.

As SAS is the largest airline on most competitive routes, the presence of the EuroBonus scheme has resulted in higher list prices for a large proportion of business travellers. The increased switching cost shows that the presence of the scheme has had an effect on business travellers' valuation of the various airlines and thus an effect on their choice of airline.

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Appendix

Table A1 Air routes included in the study

City pair		Route	
Stockholm	Göteborg	Arlanda	Landvetter
		Bromma	Landvetter
Stockholm	Malmö	Arlanda	Sturup
		Bromma	Sturup
Stockholm	Skellefteå	Arlanda	Skellefteå
Stockholm	Visby	Arlanda	Visby
		Bromma	Visby
Stockholm	Luleå	Arlanda	Luleå
		Bromma	Luleå
Stockholm	Kalmar	Arlanda	Kalmar
Stockholm	Ronneby	Arlanda	Ronneby
Stockholm	Sundsvall- Härnösand	Arlanda	Sundsvall-Härnösand
		Bromma	Sundsvall-Härnösand
Stockholm	Umeå	Arlanda	Umeå
		Bromma	Umeå
Stockholm	Ängelholm	Arlanda	Ängelholm
		Bromma	Ängelholm
Stockholm	Östersund	Arlanda	Östersund
		Bromma	Östersund

Table A2 Description of variable for competitive air routes

	Description	Mean value	Standard deviation	Obs
<i>Pax</i>	Number of passengers	79280.000	58025.300	506
<i>Price</i>	List price per km	8.065	2.511	360
<i>Total price</i>	List price (business fare)	3394.636	521.690	360
<i>Price comp.</i>	Price per km, competitors	7.670	1.967	257
<i>Departures</i>	Number of departures	1157.560	574.214	506
<i>Deps. comp.</i>	Number of departures, competitors	1285.810	621.991	505
<i>Capacity</i>	Number of seats per departure	103.404	35.074	506
<i>Distance</i>	Distance in km between airports	434.374	146.414	506
<i>No. of airlines</i>	Number of airlines with services	2.170	0.452	506
<i>Herfindahl</i>	Herfindahl index	0.582	0.130	506
<i>Highest rail fare</i>	Highest rail fare over 12-month period for competitive train route	1129.280	229.775	242
<i>Shortest rail time</i>	Shortest rail travel time over 12-month period for competitive train route	4.067	1.296	242
<i>Population</i>	Sum of the population in the two A regions (10 million)	49452.500	48503.900	506
<i>GDP</i>	Real GDP (2001 prices) per quarter (SEKm)	0.445	0.044	506
<i>FFP</i>	Indicator variable = 1 if FFP present	0.370	0.483	506
<i>SAS</i>	Indicator variable = 1 if SAS	0.423	0.495	506
<i>SASFFP</i>	Indicator variable = 1 if SAS and FFP present	0.154	0.361	506

Table A3 Description of variable for monopoly air routes

	Description	Mean value	Standard deviation	Obs
<i>Pax</i>	Number of	74283.500	42221.700	233
<i>Price</i>	List price per km	8.396	1.863	223
<i>Total price</i>	List price (business fare)	3596.112	466.610	223
<i>Departures</i>	Number of departures	1038.080	370.032	233
<i>Capacity</i>	Number of seats per departure	106.780	23.122	233
<i>Distance</i>	Distance in km between airports	441.219	101.900	233
<i>Highest rail fare</i>	Highest rail fare over 12-month period for competing train route	1040.480	180.562	99
<i>Shortest rail time</i>	Shortest rail travel time over 12-month period for competitive train route	4.803	1.052	99
<i>Population</i>	Sum of the population in the two A regions (10 million)	19208.200	13724.300	233
<i>GDP</i>	Real GDP (2001 prices) per quarter (SEKm)	0.453	0.048	233
<i>FFP</i>	Indicator variable =1 if FFP present	0.403	0.492	233
<i>SAS</i>	Indicator variable = 1 if SAS	0.991	0.092	233

Table A4 Description of variable: Stockholm (Arlanda/Bromma) - Göteborg

	Mean value	Standard deviation	Min	Max	Obs
<i>Pax</i>	139566	65408	15804	258014	83
<i>Price</i>	8.35	0.84	6.43	9.26	70
<i>Price competitor</i>	8.57	0.60	7.06	9.51	56
<i>Deps.</i>	1698.88	511.92	384.00	2612.00	83
<i>Deps. comp.</i>	1685.88	516.73	384.00	2612.00	80
<i>Capacity</i>	118.83	22.78	93.46	161.81	83
<i>No. of airlines</i>	1.96	0.19	1.00	2.00	83
<i>Herfindahl</i>	0.60	0.04	0.55	0.79	80
<i>Population</i>	141289.00	8074.44	127404.00	154433.00	83
<i>Rail fare (highest)</i>	1195.90	99.82	1024.00	1301.00	83
<i>Rail time (shortest)</i>	2.65	0.20	2.54	3.18	83

Table A5 Description of variable: Stockholm (Arlanda) - Kalmar

	Mean value	Standard deviation	Min	Max	Obs
<i>Pax</i>	43114	4963	33742	53164	43
<i>Price</i>	9.60	1.01	7.85	10.96	41
<i>Price comp.</i>					
<i>Deps.</i>	798.16	105.77	569.00	1020.00	43
<i>Deps. comp.</i>					
<i>Capacity</i>	88.68	14.17	47	117	43
<i>No. of airlines</i>	1.00	0.00	1	1	43
<i>Herfindahl</i>					
<i>Population</i>	20865.90	620.99	19749.30	21864.00	43
<i>Rail fare (highest)</i>	1127.53	218.84	886.00	1431.00	43
<i>Rail time (shortest)</i>	4.99	0.77	4.36	6.26	43

Table A6 Description of variable: Stockholm (Arlanda/Bromma) - Luleå

	Mean value	Standard deviation	Min	Max	Obs
<i>Pax</i>	103303	59535	2747	223048	77
<i>Price</i>	5.61	0.64	4.07	6.33	64
<i>Price comp.</i>	5.51	0.65	4.07	6.23	44
<i>Deps.</i>	1165.77	492.95	69	2145	77
<i>Deps. comp.</i>	1073.69	437.54	69	1867	68
<i>Capacity</i>	129.55	16.79	106.15	164.98	77
<i>No. of airlines</i>	1.88	0.32	1.00	2.00	77
<i>Herfindahl</i>	0.59	0.12	0.50	0.91	68
<i>Population</i>	18252	553.58	17190	19164	77
<i>Rail fare (highest)</i>					
<i>Rail time (shortest)</i>					

Table A7 Description of variable: Stockholm (Arlanda/Bromma) - Malmö

	Mean value	Standard deviation	Min	Max	Obs
<i>Pax</i>	113585	51823	10211	218865	95
<i>Price</i>	6.62	0.87	4.41	7.52	75
<i>Price comp.</i>	6.63	0.87	4.41	7.86	63
<i>Deps.</i>	1504.76	451.60	206	2394	95
<i>Deps. comp.</i>	1881.78	540.95	206	3037	94
<i>Capacity</i>	116.37	19.21	93.70	152.57	95
<i>No. of airlines</i>	2.31	0.49	1.00	3.00	95
<i>Herfindahl</i>	0.50	0.09	0.36	0.86	94
<i>Population</i>	86643	5406.16	78711	95924	95
<i>Rail fare (highest)</i>	1239	249.86	923	1483	95
<i>Rail time (shortest)</i>	4.96	0.95	4.00	6.27	95

Table A8 Description of variable: Stockholm (Arlanda) – Ronneby

	Mean value	Standard deviation	Min	Max	Obs
<i>Pax</i>	47196.7	7681	29421	63695	43
<i>Price</i>	8.84	0.99	7.04	10.15	41
<i>Price comp.</i>					
<i>Deps.</i>	843.67	111.48	537.00	1024.00	43
<i>Deps. comp.</i>					
<i>Capacity</i>	90.62	15.71	74.10	131.64	43
<i>No. of airlines</i>	1.00	0.00	1.00	1.00	43
<i>Herfindahl</i>					
<i>Population</i>	15274.60	524.55	14360.80	16087.60	43
<i>Rail fare (highest)</i>					
<i>Rail time (shortest)</i>					

Table A9 Description of variable: Stockholm (Arlanda) – Skellefteå

	Mean value	Standard deviation	Min	Max	Obs
<i>Pax</i>	54537	5848	43716	65850	43
<i>Price</i>	6.73	0.68	5.39	7.83	41
<i>Price comp.</i>					
<i>Deps.</i>	793.07	73.54	619.00	929.00	43
<i>Deps. comp.</i>					
<i>Capacity</i>	108.77	15.18	85	135	43
<i>No. of airlines</i>	1.00	0.00	1	1	43
<i>Herfindahl</i>					
<i>Population</i>	14144.10	164.55	13797.60	14330.50	43
<i>Rail fare (highest)</i>					
<i>Rail time (shortest)</i>					

Table A10 Description of variable: Stockholm (Arlanda/Bromma) - Sundsvall/Härnösand

	Mean value	Standard deviation	Min	Max	Obs
<i>Pax</i>	66009	33811	16800	111670	66
<i>Price</i>	10.13	1.76	6.99	12.11	58
<i>Price comp.</i>	9.97	1.55	6.99	11.52	34
<i>Deps.</i>	1023.68	354.49	192	1539	66
<i>Deps. comp.</i>	909.77	346.97	192	1439	46
<i>Capacity</i>	109.25	21.78	34.00	137.56	66
<i>No. of airlines</i>	1.70	0.46	1.00	2.00	66
<i>Herfindahl</i>	0.60	0.12	0.53	0.91	46
<i>Population</i>	21139	432.87	20353	21916	66
<i>Rail fare (highest)</i>	918	141.89	745	1130	66
<i>Rail time (shortest)</i>	3.71	0.48	3.07	4.28	66

Table A11 Description of variable: Stockholm (Arlanda/Bromma) - Umeå

	Mean value	Standard deviation	Min	Max	Obs
<i>Pax</i>	78877	45476	8071	189101	76
<i>Price</i>	7.48	7.48	4.89	8.69	65
<i>Price comp.</i>	7.33	7.33	4.89	8.59	46
<i>Deps.</i>	996.68	996.68	215	1788	76
<i>Deps. comp.</i>	899.15	899.15	215	1646	66
<i>Capacity</i>	123.62	123.62	101.26	159.58	76
<i>No. of airlines</i>	1.87	1.87	1.00	2.00	76
<i>Herfindahl</i>	0.54	0.54	0.50	0.84	66
<i>Population</i>	23047	23047	20953	24859	76
<i>Rail fare (highest)</i>					
<i>Rail time (shortest)</i>					

Table A12 Description of variable: Stockholm (Arlanda/Bromma) - Visby

	Mean value	Standard deviation	Min	Max	Obs
<i>Pax</i>	33821.4	26008	1252	125789	96
<i>Price</i>	13.38	2.62	9.25	18.12	43
<i>Price comp.</i>	13.34	1.22	11.98	15.35	8
<i>Deps.</i>	1040.56	694.63	67.00	2951.00	96
<i>Deps. comp.</i>	1302.41	584.89	187.00	2951.00	91
<i>Capacity</i>	55.18	25.86	18.49	115.93	96
<i>No. of airlines</i>	2.50	0.83	1.00	4.00	96
<i>Herfindahl</i>	0.58	0.17	0.35	0.93	91
<i>Population</i>	9852.40	288.82	9335.94	10347.90	96
<i>Rail fare (highest)</i>					
<i>Rail time (shortest)</i>					

Table A13 Description of variable: Stockholm - Ängelholm

	Mean value	Standard deviation	Min	Max	Obs
<i>Pax</i>	55996.9	34423	1196	98021	63
<i>Price</i>	7.33	0.72	5.80	8.22	41
<i>Price comp.</i>					
<i>Deps.</i>	909.65	365.71	149.00	1403.00	63
<i>Deps. comp.</i>	794.90	402.80	149.00	1403.00	38
<i>Capacity</i>	86.28	38.09	18.85	144.09	63
<i>No. of airlines</i>	1.67	0.57	1.00	3.00	63
<i>Herfindahl</i>	0.79	0.13	0.56	0.96	39
<i>Population</i>	10365.90	437.19	9567.97	11020.40	63
<i>Rail fare (highest)</i>					
<i>Rail time (shortest)</i>					

Table A14 Description of variable: Stockholm - Östersund

	Mean value	Standard deviation	Min	Max	Obs
<i>Pax</i>	69270.1	27706	11252	122444	54
<i>Price</i>	8.06	0.57	6.86	9.42	44
<i>Price comp.</i>	8.01	0.28	7.51	8.39	6
<i>Deps.</i>	901.07	284.34	182.00	1280.00	54
<i>Deps. comp.</i>	684.59	307.91	182.00	1092.00	22
<i>Capacity</i>	121.92	19.25	88.50	165.46	54
<i>No. of airlines</i>	1.41	0.50	1.00	2.00	54
<i>Herfindahl</i>	0.55	0.04	0.50	0.63	22
<i>Population</i>	22724.50	265.37	22037.00	23055.10	54
<i>Rail fare (highest)</i>	930.72	47.29	870.00	1012.00	54
<i>Rail time (shortest)</i>	5.72	0.33	5.34	6.18	54