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A comparative analysis of the application and use of public service obligations in air transport within the EU

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Abstract

The paper seeks to compare and contrast how different EEA (European Economic Area) member states have adopted and made use of the public service obligation (PSO) mechanism in air transport. Analysis shows that there is considerable variation in the extent and way in which various countries have adopted the PSO mechanism. Some countries, such as France, the Irish Republic and Norway, have made extensive use of PSOs on their domestic scheduled air services networks. This is in contrast to the approach adopted in the United Kingdom, where a number of lifeline air services are vulnerable to potentially adverse airline pricing and output decisions. This suggests that there are major inconsistencies in the approach and commitment to social air services provision across the European Union which may undermine broader policy initiatives designed to enhance mobility and accessibility.

1. Introduction

Subsidies awarded by regional and national governments to air carriers within the European Union are allowed within the framework of Article 4 of Council Regulation

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2408/92 (CEC 1992), which came into effect on January 1st 1993. Under the aforementioned regulation, EU member states and two EFTA[1] countries (Iceland, Norway) have the legal authority to impose a public service obligation (PSO) and award financial compensation (subsidy) to an air carrier operating scheduled services. PSOs can be imposed by member states on a route between two airports within their territorial jurisdiction or an airport within their jurisdiction and an airport in another member state. Public service obligations are imposed where adequate provision of air services in terms of regularity of service, capacity and pricing is not possible if carriers are solely taking their own commercial considerations into account. The rationale for imposing a PSO is to sustain air services to remote regions for economic development purposes.

Eight EU member states (France, Germany, Irish Republic, Italy, Portugal, Spain, Sweden, UK) and Iceland and Norway currently impose public service obligations, the vast majority of which are on domestic routes. Cross-border PSOs are imposed in relation to several routes from Strasbourg, services between Erfurt in Germany and Brussels, and between Derry in Northern Ireland (UK) and Dublin in the Irish Republic.

To date, there has been comparatively little research published on the subject of the PSO system or on broader social air services subsidy policy issues. Some countries such as France, the Irish Republic and Norway have had several years experience administering PSOs. There is considerable scope therefore to investigate whether the system has worked favourably and to identify the extent to which administrative authorities, small community stakeholders and air carriers have experienced difficulties in coping with the legislative parameters set by the PSO system. The number of PSOs in operation has expanded considerably since the very first tenders were issued in the Irish Republic. By

[1] European Free Trade Association

the end of 1997 there were 64 PSO routes in operation, 42 of them in France. By September 2001, the total number of PSOs had expanded to 164.

It is clear that the PSO mechanism has become increasingly used. It is therefore timely to compare and contrast the way PSOs have been adopted by different countries. The following section provides a brief introduction to the issue with references to past literature on the subject. Section 3 contrasts the extent to which different countries have adopted the PSO system. A discussion of the different ways in which PSOs have been adopted in terms of minimum service level specifications and issues relating to the setting of maximum air fares and subsidy levels are discussed in Sections 4 and 5. Section 6 assesses the different attitudes towards PSOs prevailing in different countries and where and how the line is drawn between a PSO route and a non-PSO route. The paper concludes with some recommendations as to how the PSO mechanism could be improved upon and includes a brief outline of further research possibilities. A map showing the precise locations of airports and communities cited in this paper is contained in Appendix A.

Information on specific requirements (capacity, fares, frequency, aircraft size, etc) for PSO tenders are published in editions of the *Official Journal of the European Communities.* For the purposes of this paper these editions were gathered electronically from the Eurolaw website [2].

2. Background

[2] www.ili.co.uk

Individual member states, through the relevant central government department have the legal authority to impose PSOs. PSOs can be awarded, administered and subsidised by either regional or national governments, either directly or through associated agencies. The process involves initially issuing an invitation to tender which must be published in the *Official Journal of the European Communities*. Once awarded, a carrier is granted a monopoly on the route for a period not exceeding three years. The tender usually stipulates minimum service levels and maximum fares that contracted air carriers need to satisfy for the duration of the contract. There are two tender rounds. The initial tender asks for submissions from air carriers who are able to operate services and meet the tender specifications without subsidy. If no carrier is willing to offer a subsidy-free operation, a second tender is issued which invites carriers to bid on the basis of receiving a subsidy. The awarding authority then makes a decision taking into account the level of subvention demanded, levels of service offered and any other relevant considerations. In Iceland, the Irish Republic, Portugal, Norway and Sweden (through the National Public Transport Agency) national governments are responsible for administering PSOs. In France, Germany, Italy and Spain, regional authorities administer PSOs. In the UK, where PSOs are only operated in Scotland, the Scottish Executive is responsible for administering the Glasgow PSOs while regional authorities (Orkney, Shetland, Western Isles) administer the others.

Outside of the EEA, the United States since 1978 has operated a system of subsidising air services to small communities administered centrally by the Department of Transportation (DoT) called the Essential Air Services Programme (EAS). The EAS system currently serves 114 communities with an annual budget of around US$113 million. In contrast to the EU approach, which allows for regional (member state) subsidiarity in deciding on which routes should be subsidised, the EAS programme sets

out those communities that are eligible to have subsidised air services on the basis of distance from the nearest large, medium, small and non-hub commercial airport (Reynolds-Feighan, 1999). The Secretary of Transportation determines the level of service for each remote community. If a service is not being provided on a commercial basis, the DoT invites carriers to tender and specify the level of subsidy required. In contrast to the PSO scheme, a second carrier that is able to offer subsidy-free services can enter the market. In these circumstances, the DoT gives notice to the incumbent that the subsidy is to be withdrawn and the incumbent then has the choice of operating services without subsidy or discontinuing services. According to Reynolds-Feighan (1996), this provision for market entry provides incentives for minimising subsidy levels. The EAS limits the level of subsidy to US$200 per passenger.

The robustness of the EAS system has been strongly tested since the events of September 11, 2001 as air carriers in the United States have been reducing service levels particularly to small communities. This trend has been exacerbated by low cost carriers which have increased their services at medium and large-size hub airports, thereby adversely affecting traffic levels at small airports within the same catchment area (ATI, 2003). According to ATI (2003), critics argue that the EAS eligibility criteria remains too restrictive and is subject to differing interpretation. For example, the DoT rejected the community of Lancaster's application for EAS subsidy because it was deemed to be 65.3 miles from Pennsylvania calculated on the basis of the shortest distance using small roads rather than the most commonly used road [3].

In the first published critique of Article 4 of Regulation 2408/92, Reynolds-Feighan (1995) argued that the European Commission (EC) should consider adopting some of the

[3] EAS eligibility criteria currently prohibits the DoT from subsidising air services to airports that are located within 70 miles of the nearest medium or large sized hub airport.

features of the EAS system. The author identified two key deficiencies in the PSO system, one relating to member state-level administration of PSOs and the other the existence of barriers to entry. Administration of PSOs by individual member states is criticised on the basis that there has been an inconsistent application of the PSO instrument across the EU leading to imbalances in the level and provision of air services to small communities. Reynolds-Feighan (1995) argued that a centralised EU-level programme would lead to a more transparent process and greater efficiency in the matching of funds to regional needs.

It was also noted that the regulation does not deal with the payment of subsidies for proposed service levels that are an improvement on or are in addition to the minimum levels stipulated in the tender. Member-state level administration of PSOs, which to some extent can be justified on the grounds of the widely differing geographical, social and economic conditions prevailing between countries, is often subject to strong local political pressures, which can result in highly-subjective, politically-motivated decision-making. The result can be the imposition of an excessive number of PSOs that bear little relation to issues of peripherality, economic development and the availability of alternative transportation services. Sletten (2001) claimed that there were examples of strong political pressures being exerted by regional lobby groups in the development of Norway's PSOs during the 1990s.

Barriers to entry are evident within the PSO system. One particular challenge faced by PSO administering authorities is in ensuring that bidding processes are sufficiently competitive. The problem for many potential new entrants is that there can be significant sunk costs associated with operating PSO services particularly given that the contracted air carrier is awarded a monopoly on a route for only three years. This may partly explain why in some of the more remote low traffic-density PSO markets, long-

established local air carriers such as Widerøe Flyvesselskap in Norway and Loganair in Scotland continue to dominate their national PSO markets. Interestingly, the Norwegian government, which issued new tenders in 2002 for its PSO routes, received special dispensation from the European Commission (through the EFTA Surveillance Authority [4]) to offer tenders in the form of packages rather than on an individual basis. This was done to allow air carriers to achieve economies of scale in the operation of the subsidised air services. The Norwegian government reportedly received bids from seven carriers, but it was not specified how many bids were received for each PSO package (*ATI* 2002a).

The recently released Irish government PSO tenders for services from Dublin to Donegal, Galway, Kerry, Knock and Sligo reportedly received bids from three airlines, two Irish-registered (Aer Arann and Euroceltic) and one Danish (Newair) (*ATI* 2002b). Aer Arran, which held the previous tender for all the routes, lost two of them (Donegal, Sligo) to Euroceltic. This would tend to suggest that it is possible for PSO tenders to be competitive. However, Euroceltic was declared bankrupt at the beginning of 2003 and Aer Arann is once again operating the two routes.

Another potential entry barrier arises as a result of there being only one month allowed to lapse between notification of the tender and the submission of bids. Within this time frame, air carriers face the challenge, in addition to preparing proposals, of securing suitable aircraft to operate on the route. According to Sletten (2001), this can be particularly difficult in the STOL market. For example, in the year 2000 Norwegian PSO tender, one carrier stated that it could identify only eight DHC-8 aircraft that were available. Furthermore, all of them needed expensive engine conversions and only two could be guaranteed for delivery at the start of the PSO contract (April 2000).

[4] Body set up to monitor implementation of obligations by EFTA countries which are signatories to the Agreement on the European Economic Area. Norway and Iceland have both signed up to and adopted Council Regulation 2408/92.

While there appears to exist considerable scope for reform, it is beyond the aims of this paper to consider these issues in greater depth. The focus here is to contrast the ways in which countries have made use of the PSO mechanism.

3. Extent of PSO coverage

As far as assessing the extent to which countries have made use of the PSO mechanism is concerned, Table 1 lists the number of PSO routes operational in September 2001 in the domestic scheduled markets of each EU member and EEA signatory state.

Norway has the largest number of PSO routes followed by France. In the former case, the majority of routes are located in the North of the country on services linking remote communities. In France, most of the PSOs are imposed on routes between a number of small regional airports (e.g. Brest, Roanne, Rodez) and Paris, and between major cities on the French mainland (Marseille, Nice, Paris) and airports on the Island of Corsica (Ajaccio, Bastia, Calvi and Figari). Skreikes (2003) explains that the reason why France has imposed a large number of PSOs is mainly due to a strong commitment within France both at national and regional level to connect the regions to Paris for economic development purposes.

In Spain the thirteen PSOs are all currently imposed on inter-Canary Island services, while the ten PSO routes in Portugal have been imposed on services linking the mainland with the Azores and Madeira, and on one mainland service (Lisbon-Villa Real-Bragança). In the UK, all twelve PSOs are imposed on internal Scottish routes covering services within the Shetland Islands, Orkney Islands and Western Isles, and on services from Glasgow to Barra, Campbeltown and Tiree. In September 2001, Sweden had one PSO route (Umea-Ostersund), but a further ten new tenders were issued in 2002, most of them on routes linking various regional airports (Gallivare, Torsby etc) with Stockholm.

In the Irish Republic, all domestic scheduled routes, with the exceptions of Dublin-Shannon and Dublin-Cork, have PSOs imposed on them. As for Germany, in September 2001, there were five PSO routes, all of them linking airports in the East (Erfurt, Hof, Bayreuth) with Frankfurt, Munich, Hamburg and Cologne/Bonn.

Figure 1 provides a measure of the scope of PSO coverage in each country by showing the proportion of total domestic scheduled seating capacity in September 2001 accounted for by PSO routes.

In Portugal, PSO routes account for 40% of total domestic seating capacity. This is explained by the deployment of large capacity aircraft on routes linking the mainland and the Azores and Madeira. France, Norway and Scotland have very similar levels (approximately 10%), while the proportion of domestic seats accounted for by PSOs in Germany, Iceland and Sweden is relatively insignificant. It should be noted, however, that there has been a very recent expansion in the number of German PSO routes (e.g. Rostock to Frankfurt and Munich) and the imposition of ten new PSOs in Sweden.

Figure 2 contrasts average sector distance on PSO routes. The effect of the relatively long-haul mainland-island PSOs on the Portuguese average is apparent. In France, PSO routes are generally associated with relatively long sector-distances, particularly on routes between Paris and Corsica. By contrast, in the majority of cases, in Norway, Scotland and Spain (Canary Islands), PSOs have been imposed on very short-sector distance routes. This is particularly apparent on several of the Scottish intra-island routes where flying times are of the order of ten to fifteen minutes.

Figure 3 contrasts the average seating capacity per flight between countries. These results are to a large extent a function of both sector distance and traffic density. Aircraft with relatively high seating capacities operate the majority of French, Italian and

Portuguese PSOs. On the Italian PSOs for example, which link Rome and Milan to airports in Sardinia, the tenders stipulate a requirement that the contracted air carrier operate jet aircraft. Scottish PSO flights have an average seating capacity of only twelve as they are imposed mainly on routes associated with very short sector distances and low traffic volumes. On Irish and Norwegian PSOs, turboprop aircraft with seating capacities in the region of thirty to fifty seats (Dash 8-100, ATR-42) are deployed.

4. Minimum service levels

All PSOs in operation in September 2001 required the operator to satisfy fixed levels of service for the duration of the contract. In the majority of tenders, the air carrier is required to meet a minimum level of service frequency and / or a minimum level of seating capacity to be supplied over a specific period of time (day, week, month). Levels of service are established on the basis of what the administering authority considers to be appropriate service standards on each route given the volume of traffic and sector distance. For example, some routes in Scotland, such as Glasgow-Campbeltown, have a minimum requirement for two weekday round trips, while on Lerwick-Papa Stour (Shetland Islands), a route with much lower traffic, the minimum requirement is for two return trips on a Thursday. There may also be requirements related to the minimum size of aircraft and to the timetabling of services. Table 2 lists the various service level requirements contained in each country's PSOs.

All Scottish PSOs stipulate a minimum level of service frequency, with only the Glasgow routes containing specific minimum capacity requirements. The only exceptions to the minimum frequency requirement is to be found in the Canary Islands, where most routes contain minimum levels of seating capacity rather than service frequency. Here and in other regions where there are significant seasonal fluctuations in traffic (e.g. French

mainland - Corsica, Italian Mainland - Sardinia) there are separate capacity requirements for both winter and summer seasons.

Carriers are often required to deploy aircraft with a minimum seating capacity, while in some countries only pressurised equipment must be used (e.g. Norway). Aircraft size requirements are to a significant extent driven by airfield operational limits, which restrict both the size and type of aircraft. For example, for services within the Orkney and Shetland islands in Scotland, the nine-seat BN Islander aircraft is the only commercial aircraft that can operate from the very short airstrips. In Norway, the requirement that carriers operate pressurised aircraft was to a large extent driven by political pressure from regional lobby groups.

Timetabling requirements feature in many PSO tenders. This is because the administering authority is seeking to ensure that schedules offered are as convenient as possible to the general public. For example, allowing passengers to complete a day trip to and from their destination and the ability to make convenient onward connections. The requirement can be fairly detailed as in the case of German PSOs where services from Erfurt to both Munich and Berlin are required to arrive and depart within specific time-intervals. In France, it is fairly common for PSO tenders to stipulate that passengers should be able to spend at least seven, eight or nine hours at their destination before being able to return home. In the Irish Republic, the PSOs demand that there should be an early morning departure from the regional airport (Donegal, Galway, Kerry, Knock, Sligo) to Dublin and a return flight from Dublin at the end of the day. At slot-constrained airports in France, Germany and Italy, member state governments have exercised their right to

reserve take-off and landing slots for PSO services under provisions contained in EC slot regulation 95/93 (CEC, 1993) [5].

The specification of timetabling requirements has implications regarding both the positioning and utilisation of aircraft and therefore the overall costs of the operation and level of subsidy. Allowing air carriers the freedom to set their own timetables and adjust them on the basis of market conditions will have cost advantages. However, the difficulty with allowing carriers freedom in this regard is that while service frequency may be adequate, timings of services may be unsuitable, with passengers often being forced to spend an overnight stay at their destination or being unable to connect with onward flights from the main hub airport. Table 3 contrasts minimum service levels on a selection of PSO routes.

Differences highlighted in this sample of routes serve to illustrate disparities in the way PSOs are used by countries, reflecting different priorities and broader differences in the extent to which governments are prepared to intervene in the market to secure regional, economic and social policy goals. For example, on the Glasgow-Barra PSO a minimum level of service frequency and daily capacity is stipulated, but there is no timetabling requirement. By contrast, the Irish government specifies a level of frequency, capacity and aircraft type on the Dublin-Donegal PSO. Timetabling requirements are stipulated in the PSOs for Epinal-Paris Orly and Cologne/Bonn-Erfurt. Although in the former case, no specific times or time intervals are set, the PSO tender requires that schedules are established which guarantee at least eight hours at the destination.

The requirements set by PSO administering authorities are to a large extent driven by how far policy-makers are prepared to intervene through subsidies in the market to secure a specific level of service and fare. For example, Scottish PSO minimum service levels

[5] Article 9

appear to be relatively more relaxed than in some other countries. This may be a reflection of an instinctively less interventionist approach by both the Scottish Executive and UK government. A more restrictive scheduling requirement may inflate the level of subsidy required and be an additional barrier to entry thereby reducing the competitiveness of the PSO tendering process. In some other countries, the levels of complexity contained in PSO minimum service requirements are greater, in particular, on French Mainland-Corsica PSOs and to a slightly lesser extent on those imposed in Norway.

5. Regulating the cost of travel and level of subsidy

Most PSO tenders require operators to set air fares within a limit specified by the administering authority. The only major exceptions are in France where most of the mainland PSOs exclude any such requirement. Table 4 provides details on the approach to regulating fares within PSO contracts in different countries.

In Scotland, all PSOs stipulate a maximum one-way unrestricted economy fare. These range from €156 on Glasgow-Barra to €24 on Kirkwall to North Ronaldsay and Papa Westray services. The Shetland Island PSOs have a fare limit of between €26 and €60. There are no special fare discounts offered to categories of passengers on any of the Scottish PSO routes.

Fare restrictions are also applied on all the Irish PSO routes. Each PSO has unrestricted return fare limits of between €111 and €124. The operating carrier is required to make available a proportion of seats at these air fares. For example, on Dublin-Kerry, out of the minimum level of seats required throughout the day, sixty must be offered at €111, sixty at €124 and the remaining thirty can be offered at a fare of the airline's choosing. However, there are currently no special discounts for specific categories of passenger.

In Germany, air carriers which have been awarded PSOs on services from Erfurt cannot exceed €82 + €0.25 per km for a single fare. On the Hof-Bayreuth-Frankfurt PSO, the air carrier is not permitted to set a fare that exceeds the price of a single fare on Nuremberg-Frankfurt by 5%.

The vast majority of PSOs operating in Italy, Portugal and Spain are on routes linking mainland airports with island communities. On Italian and Portuguese PSOs and those linking the French mainland and Corsica, carriers are required to offer special discounts or low fares to island residents. For example, on services between the Portuguese mainland and the Madeira airports (Funchal, Porto Santo), residents of the islands and students studying on the mainland are eligible for a 40% discount. Other discounts are also available on services between the mainland and the Azores. However, it should be noted that air services are the only means of travel to and from the mainland as there are no ferry services. In Italy, where there are a network of PSOs linking Sardinian airports (Alghero, Cagliari, Olbia) with both Rome and Milan, there exists a maximum fare limit applicable to all passengers. However, there are also special lower fares which are offered to Sardinian residents, Sardinian immigrants living on the mainland, the disabled, students and persons aged under 25 and over 70. A similar approach exists on the French Mainland-Corsican routes where there is a maximum fare and a discounted lower fare, which is offered to various categories of passenger.

The extent of regulatory complexity in the PSO tender and the scale and degree to which fares are capped will determine the level of subsidy required to meet the contracted air carrier's operating deficit. Table 5 provides data on levels of subsidy awarded on PSO contracts in different countries for the year 2000.

Differences in the aggregate level of subsidy are to a large extent directly correlated to the volume of passenger traffic and the number of PSO routes. Subsidy levels range from €46 million awarded in Norway to just €0.6 million in Sweden. There are also marked variations in the average level of subsidy per passenger. The average subsidy per passenger on the Erfurt PSOs was €136 in 2000. Average per passenger subsidy levels in Scotland, Norway and Sweden are broadly the same, while the lowest levels of subsidy per passenger were on PSOs in France, the Irish Republic and Portugal where traffic volumes are higher and unit operating costs lower.

Table 6 compares the average subsidy per passenger of selected PSOs by route, or group of routes, in France, the Irish Republic, Norway and the UK. It is apparent that there are not only significant differences between countries but also within countries in levels of average subsidy per passenger. For example, PSO air service networks on the Scottish Islands of Orkney and Shetland are very similar in terms of sector distance. However, the average subsidy per passenger awarded in Shetland (€83) is over double that in Orkney (€40). This difference may be due to the fact that traffic volumes on Shetland inter-island services are two thirds that of Orkney, which would allow for better utilisation of aircraft and economies of scale. The Vardø-Kirkenes PSO in Norway has similarities with both Orkney and Shetland in terms of capacity offered and sector distance. Yet the average subsidy in 2000 was €173 per passenger, which is double that of Shetland. It is probable that part of the differences were accounted for by the relatively high costs associated with operating the Dornier 228 on the Vardø-Kirkenes PSO compared to the Britten-Norman Islander, which is used on the inter-island services in Orkney and Shetland. However, differences in the maximum fares that can be charged are highly significant. The maximum one-way fare, which can be levied on Vardø-

Kirkenes, is €68 compared to €61 on the Shetland services, in spite of the fact that operating costs appear to be much higher on the Norwegian route.

A comparison of the traffic volumes and maximum fare levels set on the busiest PSO routes in France, the Irish Republic, Iceland, Ireland, Italy, Norway, Portugal, Scotland and Sweden in 2001 is given in Tables 7 and 8. It is apparent that the PSOs linking France, Italy and Portugal with their respective island communities have high volumes of traffic. For example, the average number of passengers on the four routes from Paris to Corsica is approximately 200,000, a level that would imply commercial viability under most operating conditions.

While the range of minimum service requirements and limits on fare are key influencing factors, the level of subsidy on a PSO will also be influenced by how competitive the PSO tendering process is. The total level of subsidy in Norway for the tenders issued in 2000 was 15% higher than in 1997, mainly due to the lack of competing tender proposals being submitted (Sletten, 2001). This may be due to the existence of entry barriers, in particular, the risk of incurring high sunk costs as a result of operating groups of routes in Norway. It is also significant that so few examples exist of carriers from other countries operating such services. The only example of a PSO route from these three countries that is not operated by a local carrier is Dublin-Derry, which is served by the Scottish airline Loganair.

A number of factors influence the amount of subsidy that will be required to operate a given PSO service. The costs of operating a route will be strongly affected by the size and type of aircraft to be used. An older, unpressurised aircraft, such as a Shorts 360, will invariably be less expensive to run than a regional jet, for example. The route length, available airport infrastructure, the volume and seasonal nature of the traffic, and the type

of route will determine the choice of aircraft to be employed. Operations to small islands such as those in the west of Ireland are really only feasible with small aircraft seating fewer than ten passengers. In other circumstances, a trade off will exist between service frequency and aircraft size. On a given route, for example, using a 19 seat aircraft may make it possible to offer three flights per day, whereas use of a more sophisticated 50 seater may restrict operations to once daily. The nature of the route will also affect the schedule to be provided. It may be that a service links an outlying island with a regional centre, in which case the traffic will be mostly point-to-point. In other instances, the service will be providing feeder traffic to connect with other regional operations.

To demonstrate the strange mix that is apparent between EU countries, two PSO routes are contrasted below. Information about the two operations is contained in Table 9. It is interesting to note that it is the more heavily trafficked route between Dublin and Donegal that has the higher subsidy. The Scottish route from Glasgow to the Hebridean island of Tiree with around half the traffic of the Irish example requires 45% less subsidy. Both routes have a service once a day during the week, with load factors in the low 40s. The Donegal service was operated by Aer Arann until recently with a Shorts 360 aircraft, equipped with 36 seats. This has subsequently been upgraded to a 50 seat ATR 42, providing a more comfortable journey for passengers. A much smaller and less sophisticated aircraft, the unpressurised De Havilland Twin Otter, equipped with 19 seats, provides the service to Tiree. The use of this aircraft by Loganair is to a large extent influenced by their PSO operation to the island of Barra. The airstrip at Barra is the cockleshell beach at Castlebay, to which the Twin Otter is ideally suited. Attempts to use a larger, heavier aircraft on this service have not proved successful. Hence, the Tiree operation remains in the hands of the Twin Otter.

Fare levels are of key significance in explaining the differing levels of subsidy. On the Dublin-Donegal route, the maximum return fare was set at €108 whilst the equivalent price for the Glasgow-Tiree service was close to double this level at €240. In terms of subsidy per single passenger journey, the Tiree operation was a little more expensive. Without the higher fare however, the level of subsidy would have been much greater. It is clear that the Irish Government is more generous in providing subsidies for essential air services than is the Scottish Executive.

6. PSO vs non-PSO: where do national governments draw the line?

One very important point to be made regarding the application of PSOs in the European Union is that national governments appear to have very different notions of which routes deserve to have PSO regulatory protection and associated subsidy and those that do not.

Norway is similar to the Highlands and Islands of Scotland in terms of topography and to some extent population size and density. While the Norwegian government has made extensive use of PSOs not only in the remoter regions of the country, in Scotland, most of the PSOs have been imposed on very low volume, short sector distance routes located in peripheral regions. The only routes involving the mainland are those from Glasgow to Barra, Campbeltown and Tiree. Other lifeline links that are equally vital strategically and economically, such as Orkney-Aberdeen and Shetland-Aberdeen, are however excluded from the PSO regime. These apparent inconsistencies in government policy can be illustrated by contrasting services between Aberdeen and Sumburgh (Shetland) with comparable PSO routes in other countries.

Aberdeen-Sumburgh is served three times daily with a 64-seat ATP aircraft operated by British Airways Citiexpress, while Oslo-Førde is served five times daily with a 37-seat Dash 8-100 operated by Widerøe Flyvesselskap. The overall level of weekly capacity

between the two routes is therefore broadly similar. If one measures peripherality in terms of provision of surface transport services, then in both cases, travellers would face the alternative of considerably more lengthy journeys using alternative transport modes. In the Norwegian case, the only alternative to the Førde-Oslo PSO air service is a once a day thirteen-hour journey by coach. The alternative to travelling by air between Aberdeen and the Shetland Islands is a daily fourteen-hour voyage by sea, a trip often subject to delay as a result of adverse weather conditions especially during the winter months. However, in spite of the fact that air transport offers much more convenient access between Aberdeen and Sumburgh, the Scottish Executive and UK Government has chosen not to impose a PSO. In Norway the government has chosen to do otherwise on a similar route. As a consequence, pricing and output (capacity, frequency, aircraft size) decisions on Aberdeen-Shetland are subject to the commercial imperatives of the operator, while minimum service levels and maximum fares between Oslo and Førde are determined by the Norwegian government. In the North of Scotland, there is a campaign currently being waged by local stakeholders to extend the scope of PSOs in the face of a very strong perception amongst the general public that fares on non-PSO air services between peripheral regions and the mainland are very high. There is also an opinion widely expressed amongst stakeholders that lower fares will encourage greater mobility, thereby reversing recent declines in traffic levels on a number of routes (Press & Journal, 2002).

In many cases the line between PSO and non-PSO designation is arbitrary and often the product of how successful regional lobby groups have been at influencing national policy. Such decisions rest strongly on whether a government's aviation policy is inherently interventionist or market-orientated. Differences in approach are very apparent when the attitudes to PSOs of decision-makers in both Scotland and the UK as a

whole are compared with those prevailing in France. The route linking Nice and Figari (Corsica), for example, can be compared with Aberdeen-Sumburgh in terms of distance, frequency, aircraft size and overall capacity. Both services link airports on the respective mainland with island communities. The French air service however is subsidised while the comparable Scottish route is not. At the behest of the Corsican regional authorities France has imposed a PSO on the Nice-Figari route, with minimum levels of service requirements and maximum fares stipulated. Several other routes linking Corsica with mainland cities also have PSO status. It is apparent the French authorities have made extensive use of PSOs, even where traffic volumes on some of the routes would appear to be at a level that would normally imply commercial viability. For example, Paris-Ajaccio handled 382,654 passengers in 2000. The impetus for imposing PSOs has come mainly from regional authorities and local chambers of commerce who are of the view that regular, convenient and affordable air service links to Paris are a social and economic imperative.

The Dublin-Kerry PSO route in the Irish Republic is also very similar to Aberdeen-Sumburgh, in terms of sector distance, traffic volume, capacity and frequency offered. The key point however in this case is that Sumburgh in the Shetland Islands is more peripheral relative to Aberdeen, than Kerry is to Dublin. Whilst it takes approximately four hours to travel by train from Killarney (County Kerry) to Dublin, it takes some fourteen hours to travel by sea from Aberdeen to Lerwick (Shetland Islands).

One problem highlighted by regional stakeholders in the Highlands and Islands of Scotland is the fact that the motivations for expanding the scope of PSOs have more to do with achieving affordable airfares and improved flight times, rather than simply maintaining access. While some low-density peripheral routes are being provided commercially they are subject to constraints imposed by aircraft scheduling, resulting in

flight timings that make day-trips either impossible or very difficult to achieve. A PSO could address this problem by stipulating departure and arrival times, as well as service frequency. The affordability of air travel has become a key policy issue in the Highlands and Islands of Scotland where there is growing anecdotal evidence of comparatively high fares (Press & Journal, 2002). If demand were sufficiently price elastic, subsidy levels need not be high.

Clearly, the result of member-state level designation of PSOs is that significant imbalances exist in the provision of air services to small communities between different regions across the EU (Reynolds-Feighan, 1995). As a consequence, EU-level administration of PSOs has been suggested as an alternative to the existing regime, whereby PSOs would be adopted on the basis of common and transparent criteria as exists in the US Essential Air Services Programme. The current PSO system incorporates an element of subsidiarity in decision-making. This is achieved through, on the one hand, establishing a common EU-wide legal framework to administer PSOs, with, on the other hand, issues such as which routes should be subsidised and how much subsidy should be paid, being left to the discretion of member states who make decisions on the basis of their own economic and regional policy goals. However, by granting member states this discretion, imbalances in provision, affordability and access do occur and may run counter to broader EC social, economic and regional policy objectives. For example, the European Commission has made various long-term policy commitments to enhancing economic and social cohesion across the Union. Central to achieving this aim must be to have a sustainable transport strategy which is able to deliver enhanced mobility and access between peripheral regions and major economic and political decision-making centres. A fully transparent and non-discriminatory EU-level administered social air services programme would to some extent assist in the attainment of these broader

economic and social aspirations. Greater mobility and accessibility for communities located in peripheral regions cannot be achieved universally by leaving key decisions to individual member states, as these will be influenced significantly by the degree to which regional interests are able to exert influence over national government policy.

7. Conclusions

This paper has highlighted differences in terms of the degree to which member states have adopted the PSO mechanism in respect of air transport services. Countries such as France and Norway have made extensive use of PSOs. In the case of Norway, this is mainly due to the fact that there are many small communities located in remote regions where air transport is the only viable means of public transport. By contrast, in France some of the routes that have been given PSO status have convenient surface transport alternatives and some have large traffic volumes. Germany is increasingly making use of the PSO mechanism, with regional governments using PSOs as part of a broader economic strategy to achieve a greater degree of integration between East and West German economies. In all three of the above-mentioned countries, national government policy-makers appear to be more receptive to regional political pressures than in the UK where intensive lobbying by regional stakeholders in the Highlands and Islands has failed to persuade both the national government and the Scottish Executive to expand the scope of the PSO mechanism to other routes.

As a result of a less than enthusiastic view of the role of PSOs in air transport, the system has not been adopted to the same extent in the UK as it has been in other countries (UK DETR, 1999). This is in spite of the fact that many communities located in peripheral regions have faced problems of maintaining conveniently timed and affordable air services, which to some extent could have been ameliorated through the use of PSOs.

Given, differences in member states' attitudes and approaches toward PSOs, and the consequent imbalances in the provision of air services, there are convincing arguments for centralising the administration and funding of PSOs at EU-level. This, in theory at least, could result in a more efficient and equitable distribution of subsidy, and a greater degree of consistency with broader EU economic, social and regional development goals.

An investigation of the price elasticities of demand for air travel between various peripheral communities and their corresponding economic centres would be required if such an approach were to be adopted. How an EU-level system could be implemented is beyond the scope of the paper, but would also form a useful topic for research.

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Appendix A: Map of airports cited in the paper



Table 1: Number of Domestic market PSOs by Country (September 2001)

Country	Number of PSOs

France	46
Germany	5
Iceland	1
Irish Republic	5
Italy	6
Norway	61
Portugal	10
Scotland	12
Spain	10
Sweden [1]	1

[1] 10 more PSOs were introduced in 2002

Source: Official Journal of the European Communities

Table 2: Service level summary characteristics of PSOs by Country (September 2001)

	Minimum service frequency	Minimum Seating capacity	Minimum aircraft size	Timetabling requirements
France-Corsica	All routes	Most routes	All routes	Most routes
France-Mainland	All routes	Some routes	All routes	Most routes
Germany	All routes	Some routes	Yes	All routes
Iceland	All routes	None	Yes	All routes
Irish Republic	All routes	All routes	Yes	All routes
Italy	All routes	All routes	All routes	All routes
Norway	All routes	All routes	Yes	All routes
Portugal	All routes	Most routes	Most routes	Some routes
Scotland	All routes	Some routes	Yes	None
Spain	Some routes	All routes	No	Most routes
Sweden	All routes	All routes	None	None

Source: Official Journal of the European Communities

Table 3: Minimum service levels on PSO routes: a selected comparison

	Minimum service frequency	Minimum Seating capacity	Minimum a/c size	Timetabling requirements
Glasgow-Barra	1 per day	11-14 seats per day	None	None
Cologne/Bonn-Erfurt	2 per day	None	18-seat	Return flight (0600-1000) & (1500-2200)
Donegal-Dublin	1 per day	30 seats per flight	30-seat pressurised	None
Epinal-Paris Orly	2 per weekday	None	18-seat	Morning and evening (minimum 8 hours in destination)

Source: Official Journal of the European Communities

Table 4: Application of fare limits on PSOs by country / region

	Maximum one-way economy fare	Special discounts Island residents	Students	Pensioners	Others
France-Corsica	All routes	None	All routes	All routes	None
France-mainland	Most routes	None	None	None	None
Germany	All routes	None	None	None	None
Iceland	All routes	None	None	None	None
Irish Republic	All routes	None	None	None	None
Italy	All routes	All routes	All routes	All routes	All routes
Norway	All routes	None	None	None	None
Portugal	Most routes	All routes	Some routes	None	None
Scotland	All routes	None	None	None	None
Spain	All routes	None	None	None	None
Sweden	None	None	None	None	None

Source: Official Journal of the European Communities

Table 5: Total PSO Subsidy and PSO passenger traffic by country (2000)

	Total Subsidy (€million)	Passengers (2000)	Subsidy per passenger €
France [4]	18.3	840,461	21.77
Germany [3]	2.5	18,440	135.57
Irish Republic [2]	4.4	187,744	23.43
Norway [5]	46.2	765,880	60.32
Portugal [1]	28.2	809,084	34.85
Sweden	0.6	11,000	54.54
UK	2.8	40,882	68.48

Sources: ATI (2002c), Irish Government Department of Public Enterprise, Norwegian Ministry of Transport and Telecommunications, Orkney Islands Council, Rikstraffiken (Sweden), Freistat Thuringen (Germany), Scottish Executive, Shetland Islands Council, Western Isles Council

[1] Subsidy and passenger traffic refer to1999
[2] Dublin-Knock and Dublin-Londonderry not included
[3] Only Erfurt PSOs included
[4] Only Paris-Corsica PSOs included
[5] No Subsidy or traffic data for route areas 5 and 6

Table 6: Average subsidy (in €) per passenger versus annual passenger traffic: selected PSOs 2000

Route/ Routes	Country	Traffic	Average subsidy per passenger in €
Paris-Corsica	France	840,461	21.77
Group 9 [1]	Norway	158,911	48.26
Group 1 [2]	Norway	115,438	118.81
Group 10 [3]	Norway	102,048	31.91
Group 8 [4]	Norway	101,515	46.44
Group 12 [5]	Norway	81,751	102.41
Dublin-Kerry	Irish Republic	78,578	12.27
Dublin-Galway	Irish Republic	72,315	19.01
Group 11 [6]	Norway	54,907	53.58
Group 3 [7]	Norway	47,352	34.78
Group 4 [8]	Norway	37,295	48.20
Group 7 [9]	Norway	32,974	25.54
Roros-Oslo	Norway	24,597	20.95
Dublin-Sligo	Irish Republic	24,434	36.10
Glasgow-West Scotland	UK	17,278	93.35
Dublin-Donegal	Irish Republic	12,417	82.06
Western Isles	UK	12,218	37.31
Group 2 [10]	Norway	9,100	172.68
Orkney	UK	6,863	39.95
Shetland	UK	4,523	82.73

Sources: Irish Government Department of Public Enterprise, Norwegian Ministry of Transport and Telecommunications, Orkney Islands Council, Scottish Executive, Shetland Islands Council, Western Isles Council, ATI (2002c)

1 Mo i Rana-Bodø, Mo i Rana-Trondheim, Rørvik-Trondheim, Namsos-Trondheim, Mosjøen-Trondheim, Mosjøen-Bodø

2 Hasvik-Hammerfest, Hasvik-Tromsø, Vadsø-Båtsfjord-Berlevåg-Mehamn-Honningsvåg-Hammerfest and between these airports and Kirkenes and Alta, Sørkjosen-Tromsø

3 Florø-Bergen, Florø-Oslo

4 Brønnøysund-Bodø, Brønnøysund-Trondheim, Sandnessjøn-Trondheim, Sandnessjøn-Bodø

5 Ørsta-Volda-Bergen, Ørsta-Volda-Oslo, Sandane-Bergen

6 Førde-Oslo, Førde-Bergen

7 Lakselv-Tromsø

8 Andenes-Bodø, Andenes-Tromsø

9 Narvik-Bodø

10 Vardø-Kirkenes

Table 7: Passenger traffic levels on the busiest PSO routes by country in September 2001

Country / Region	Busiest route	Passenger traffic (2000)	Frequency weekly (one-way) June 2000
France	Paris-Ajaccio	382,654	33
Iceland	Reykjavik-Gjogur	350	2
Irish Republic	Dublin-Kerry	79,000	25
Italy	Rome-Cagliari	509,466	84
Norway	Svolvær-Bodø	69,285 [1]	31
Portugal	Lisbon-Funchal	660,306 [2]	95
Scotland	Stornoway-Benbecula	9,611	10
Sweden	Umea-Ostersund	11,000	11

Sources: DGAC France, Icelandic Ministry of Communications, Highlands & Islands Airports Ltd, Zuccarini-Gagnoni (2002), Brown (2003), Official Journal of the European Communities, Rikstrafiken (Sweden), Norwegian Ministry of Transport & Communications

[1] Traffic for period 1st April 2000 – 31st March 2001

[2] Traffic for 2001

Table 8: Maximum fare levels set on tenders for the busiest PSO routes by country (September 2001)

Country / Region	Busiest route	Sector Distance (km)	Maximum Single Fare in €	Maximum Fare per Km in €
France	Paris-Ajaccio	906	144	0.16
Iceland	Reykjavik-Gjogur	352	61	0.17
Irish Republic	Dublin-Kerry	259	62	0.24
Italy	Rome-Cagliari	393	66	0.17
Norway	Svolvær-Bodø	109	91	0.83
Portugal	Lisbon-Funchal	964	70 [1]	0.07
Scotland	Stornoway-Benbecula	104	92	0.88
Sweden	Umea-Ostersund	293	no limit	n/a

Sources: DGAC France, Icelandic Ministry of Communications, Highlands & Islands Airports Ltd, Zuccarini-Gagnoni (2002), Brown (2003), Official Journal of the European Communities, Rikstrafiken (Sweden), Norwegian Ministry of Transport & Communications

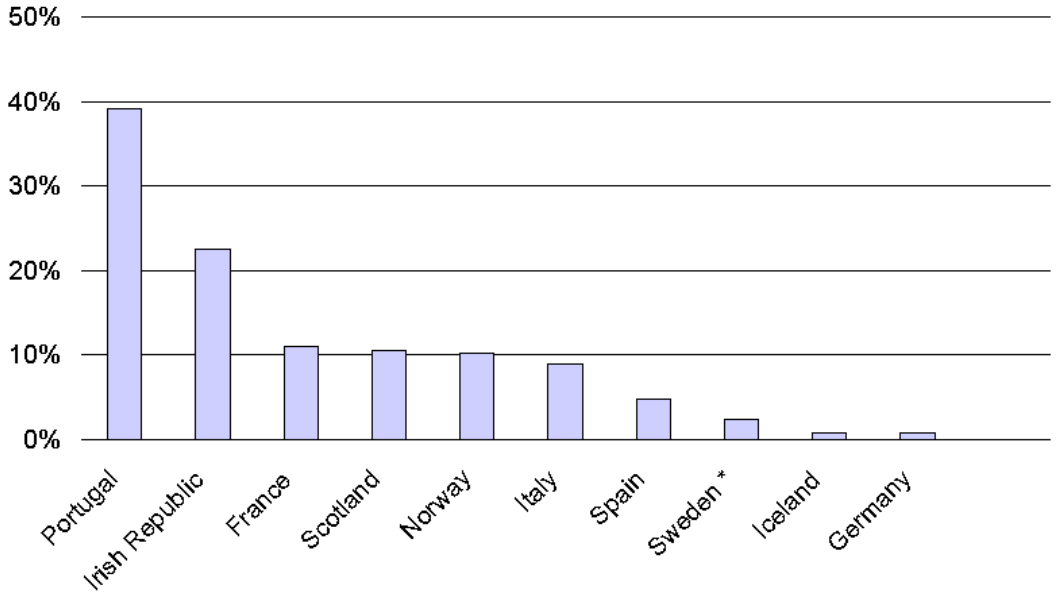
[1] Applicable to residents of the island of Madeira only

Table 9: Comparison of Dublin-Donegal and Glasgow-Tiree PSO routes

	Dublin - Donegal	Glasgow - Tiree
Sector length (kms)	222	174
Service frequency	Daily	Daily except Sunday
Passenger traffic in 1999	10,753	5,030
Daily capacity	36 seats	19 seats
Load factor in 1999	42%	43%
Return fares	€108-€123	€160 - €240
Route subsidy	€750,000	€416,000
Subsidy per single trip	€82	€83
% of costs subsidised	38%	31%

Source: Williams, (2001)

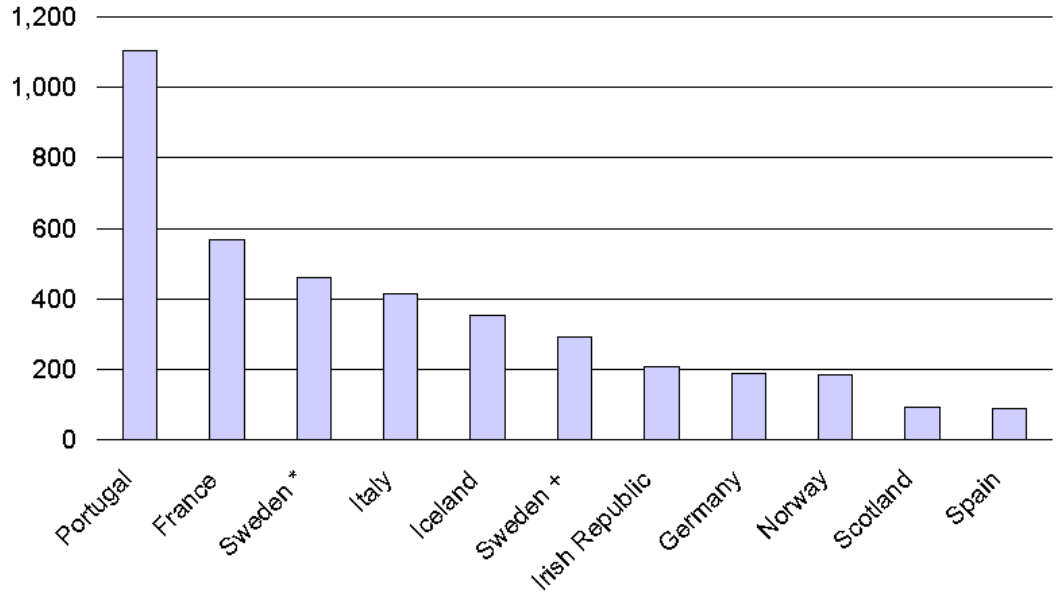
Figure 1: % of total domestic scheduled seats accounted for by PSO routes (Sept 2001)



* Includes 10 new PSOs

Source: Official Airlines Guide Database

Figure 2: Average PSO sector distance (km) by country (Sept 2001)

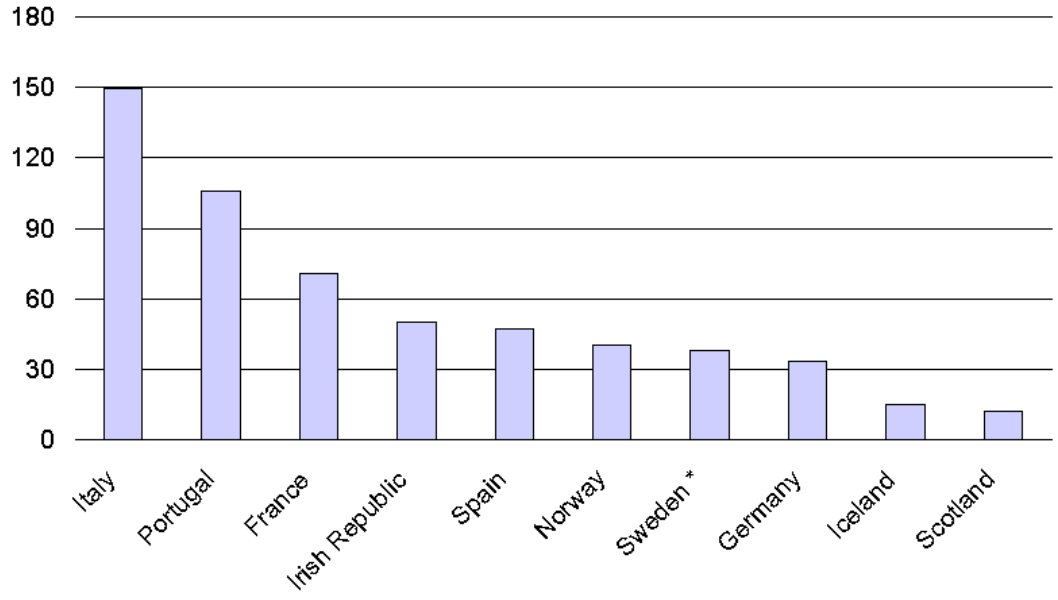


* Includes 10 new PSOs in addition to Umea-Ostersund

+ Umea-Ostersund

Source: Official Airlines Guide Database

Figure 3: Average seats per aircraft deployed on PSO routes by country (Sept 2001)



* Includes 10 new PSOs in addition to Umea-Ostersund

Source: Official Airlines Guide Database



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Williams, George; Pagliari, Romano

2004-01
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