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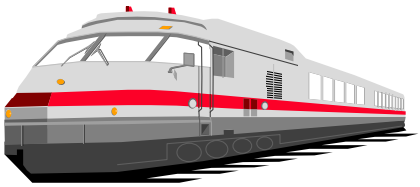
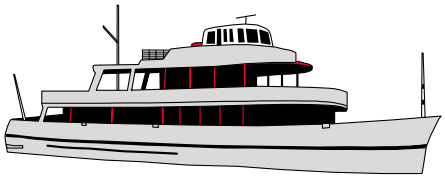
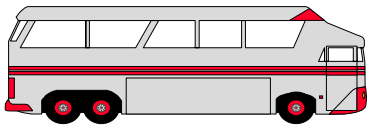
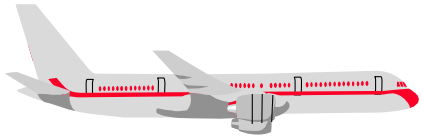
A study of the VAT Regime and Competition in the Field of Passenger Transport









DG XXI C1
INDIRECT TAXATION
VAT and other turnover taxes

A study carried out for the European Commission by KPMG

A Study of the VAT Regime and Competition in the Field of Passenger Transport

Executive Summary

23 October 1997

KPMG
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Contents

1 Background

In 1992 the European Commission announced its intention to present to the European Parliament and the Council a report evaluating the overall situation regarding VAT on passenger transport, taking account of developments in the transport sector and having regard to the proper functioning of the internal market.

At present, passenger transport is taxed on the basis of distance covered in each Member State and tax is collected at internal frontiers. Many different tax rates apply to passenger transport across the EU with some Member States applying exemptions and zero-rates. Even within the same Member State competing modes of passenger transport may be taxed differently.

The current arrangements are considered to be unsatisfactory in the context of the single market. Further, with the abolition of frontier controls the tax has become difficult to collect and impossible to enforce effectively. In consequence, this study explores the economic, fiscal and practical effects of a number of alternative taxation structures for passenger transport services performed within the EU.

2 Study Objectives

In the process of producing this report the following areas have been considered:

- the demand profile of the EU transport market and competition between modes;
- Member States' VAT regimes covering passenger transport at the domestic, intra-EU and EU-third country level for both business and non-business passenger transport;
- the scale and extent of economic distortions in the transport market caused by variations in Member States' VAT regimes; and
- the practical, technical and economic implications and effects of the alternative taxation options under two VAT rate scenarios.

The aim of this study is to answer the key questions set out below:

- *What are the characteristics and size of the EU transport market?*
- *To what extent does the degree of competition in the EU passenger transport market permit the application of different tax rates to different modes of transport?*
- *What are the deficiencies of the current VAT System?*
- *What is the effect of the differences in the right of business to deduct tax on travel expenses?*
- *What would be the practical, economic and fiscal effects in the intra-EU market of each of the following taxation options under a) uniform VAT rate across modes and Member States? and b) existing VAT rates in Member States?:*
  - *taxation at the place of departure;*
  - *taxation at the place of arrival;*
  - *taxation at the place of establishment of the supplier; and*
  - *taxation at the place of establishment of the customer.*
- *What would be the practical, economic and fiscal effects of a uniform (positive) rate of VAT on passenger transport in the domestic EU market?*
- *What would be the impact of the application of a uniform (positive) rate of VAT on passenger transport within the EU and to what extent would this policy damage the European transport industry with regard to third country operators?*

The findings of the study are presented in the following sections as the answers to these key questions with our conclusions presented at the end of the executive summary.

2.1.1 ***What are the characteristics and size of the EU transport market?***

Growth in the transport market in Europe is closely linked to changes in the level of gross domestic product. Demand for transport, in terms of passenger kilometres, has doubled in size since 1970. It is dominated by car while the non-car sector comprises 35% for air, 37% for road (primarily bus and coach transport) 28% for rail and insignificant for other modes (the sea market is very small and accounts for only about 0.3% of all journeys).

The passenger transport market in Europe is not homogenous. Not only does the level of demand vary across the individual Member States but the importance of the alternative modes is also different in different Member States. Any tax measures that affect the competitive position of the alternative modes in different ways will have differing consequences for different Member States.

The European passenger transport industry is experiencing continuing change in its regulatory, environmental and financial circumstances. Governments are increasingly looking to reduce subsidies to all sectors and to privatise enterprises where this is politically viable and are using taxation to correct market failures and environmental externalities.

Air

Domestic, intra-EU and international trips account for roughly equal proportions of the total number of trips, although international trips account for a large proportion of revenue since they are, on average, significantly longer. The vast majority of passenger transport journeys within the EU are domestic. In the intra-EU rail and air passenger transport market, air accounts for approximately 75% of journeys. This is likely to change significantly as a result of the expansion of the High Speed Rail (HSR) network infrastructure.

In the air sector, the national “flag carriers” dominate the total market for domestic, intra-EU and EU: third country flights (currently holding 63% of the market). The chartered air market is also significant, accounting for approximately 25% of the combined scheduled and chartered market operated by carriers.

Non-EU based carriers are beginning to increase market share, particularly on EU-third country routes (currently they hold 54% of the market); market penetration is somewhat less on domestic and intra-EU routes but is expected to increase, possibly significantly, in future years. These changes follow increasing deregulation in the EU air transportation market. Overall, the air sector is growing rapidly (from 8% of the market in 1970 to 35% of the market in 1994).

The advent of low cost, scheduled operators coupled with the latest round of de-regulation in the EU is likely to further increase competitive pressure on incumbent carriers.

Rail

In the rail sector, domestic journeys account for 99.5% of all journeys. In comparison with the air sector, the EU rail sector handles approximately thirteen times the number of

passengers as the EU air sector. However, intra-EU trips are a much smaller proportion of overall trips for rail compared to air.

Looking forward, HSR is widely regarded as being an important development. Studies on the potential impact of HSR have suggested that it is likely to take market share from both the private car and from air and is likely to increase the incidence of cross-border journeys significantly, particularly affecting France, Germany, Italy and Spain.

Sea

Sea and inland waterway is a small market in relative and absolute terms and overall has only a small share of the total EU market. However, in the intra-EU market only, cross border journeys by sea take a more substantial proportion of the market. In addition, there are a number of important corridors, particularly on the periphery of the EU, where ferry traffic is significant.

A significant proportion of traffic in the sea market is undertaken by non-EU operators, or EU operators using a 'flag of convenience', who at present command a 14% share of the intra-EU market.

Coach

Cross-border coach travel is relatively small in scale compared to the total EU market and is estimated to be in the region of just 5 million passenger trips in 1996. However, the emergence of cheaper scheduled airline operations from cities such as Brussels and Amsterdam has created a new phenomenon of "coach-hubbing", where passengers travel by coach in order to take advantage of cheaper air travel, departing from an EU state other than their own.

There is considerable variation in the use of coach services by particular market segments with the young, low income groups and in some instances migrant workers being the most substantial users.

In the coach market, there is some evidence of Eastern European operators beginning to penetrate the market, but at present this is on a limited scale.

The public transport market

The public transport market (which covers urban transport on railways, trams, metros, buses and coaches) differs across EU Member States; Italy and Spain have the largest markets at present. The market itself is characterised, overwhelmingly, by domestic journeys; there are few cross-border journeys.

2.1.2 ***To what extent does the degree of competition in the EU passenger transport market permit the application of different tax rates to different modes of transport?***

The transport market segments naturally into a number of sub-markets, defined by distance. Within these markets, it is helpful to further identify business and non-business segments.

The most important factor in determining both the demand for passenger transport and the choice of mode is the price and time costs involved. For any given trip, consumers tend to opt for the transport mode which minimises these costs by a trade-off between price and time. Sensitivity to price tends to be less in the business segment of the market, whilst sensitivity to time tends to be less in the non-business segment.

Competition between modes tends to decrease with distance although competition between operators is quite strong in some parts of the long-distance market.

The study analysis revealed that where competition is high (for example in urban areas) or between high speed rail and air over medium distances, taxing different modes or operators with varying rates of VAT is likely to have some distortive effect on competition between modes.

Competition between modes can also only take place where appropriate infrastructure exists now or in the future. This is illustrated in the HSR sector where at present the capacity for competition is limited by the physical infrastructure of network, but in the future as HSR infrastructure is likely to grow rapidly in the next decade or so, the scope for competition will rise correspondingly. Estimates suggest an increase from the current size of 10 million passenger trips to around 32 million passenger trips by 2005.

Other markets where competition between modes is strong (but to a lesser extent) is in the long distance leisure market between air, rail and coach travel (consisting of 11½ million passenger trips) and between air and overnight rail in the medium distance business segment (¼ million passenger trips).

For any given transport segment where competition between modes exists, the impact of the VAT distortion will depend on the proportion of the non-business travel in the market in question (this sector is more price sensitive than the business market and travellers are unable to deduct input VAT) and the extent to which any VAT differences are passed on to prices.

The analysis shows that different modes of passenger transport compete at different distances. In terms of the competitive impact of different VAT treatment of different modes, **w*here there is little or no competition between modes, it is possible to levy different rates of VAT without giving rise to significant competitive distortions.***

For example, while competition may be high within urban transport markets, competition between the urban and long-distance market does not appear to exist. Therefore, there is no reason, on competitiveness grounds, to levy the same rate of VAT on urban and long-distance transport. This is illustrated in Greece, where reduced rates of VAT are levied on passenger transport on certain islands, yet this causes no competitive distortions as the island transport markets are distinct from the rest of the Greek transport market.

2.1.3 ***What are the deficiencies of the current VAT System?***

Within the EU and within individual Member States, the VAT rules applicable to passenger transport differ significantly in terms of levels of taxation, coverage and application. These variations can take a number of forms and exist both within States (such as Government not taxing modes equally) and between States.

For wholly domestic journeys in the vast majority of Member States, there is no VAT-induced distortion of competition between transport modes because the same VAT rate is applied to each.

For intra-EU and international journeys commencing or terminating within the EU, the position is more complicated. Distortions do arise between rail and air travel (on average, higher rates of VAT are levied on domestic legs of international/intra-EU journeys by rail and coach than by air in five Member States).

The main justification for this is the risk of creating a competitive disadvantage for national airline operators in comparison with other (non-domestic or non-EU) operators.

The study revealed that the passenger transport segments where there may be a competitive economic impact from VAT created distortions are:

- ***medium-distance segment, current HSR routes where rail is positively taxed today and air is zero VAT rated, for business and leisure;***
- ***medium-distance segment, future HSR routes where rail is positively taxed today and air is zero rated, for business and leisure;***
- ***the medium-distance segment, overnight rail services which are positively taxed and air is zero rated, for business; and***
- ***long-distance segments, where rail and coach are positively taxed and air is zero rated and air competes with rail (conventional/HSR) and coach for the (very) price sensitive leisure market.***

Taxation, by leading to higher prices, leads to lower demand for trips; the extent of the reduction depends on how sensitive demand for trips is to price. Demand for business travel is less price sensitive and, therefore, tends to fall less than leisure travel for any given increase in VAT.

Thus, our analysis shows that the current intra-EU HSR segment might have around 19,000 (0.5% of current HSR traffic) fewer passengers as a result of the VAT difference. The worst case estimates could be as high as 54,000 fewer passengers in the segment, while the best case estimate could be as low as 6,600.

By 2005, the estimates suggest that HSR might have anywhere between 36,000 and 296,000 fewer passengers if the existing VAT induced distortion was not removed. This distortion represents up to 1.3% of HSR traffic, although the estimates are more modest in terms of the overall medium-distance intra-EU market (estimated to be around 55 million trips and growing to 91 million in 2005).

In addition, conventional rail also experiences distortions, most notably in the overnight rail segment for business travellers. However this is a very small market and thus the

magnitude of the distortion is very low, with at most only 5,000 fewer overnight rail passengers in the segment as a result of the VAT difference.

In the long distance leisure segment the proportion of the distortion is much greater since the segment is more price sensitive and all passengers can not reclaim VAT. Estimates suggest that in the current market, between 29,000 (0.8% of the rail/coach segment) and 192,000 (5.5% of the rail/coach segment) are currently not travelling in the rail/coach segment. Again the estimates are more modest in relation to the overall long distance market.

In terms of practical distortions created by differences in the implementation of current rules, many Member States do not implement the legislative provisions relating to passenger transport services carried out within domestic territory in a uniform manner. This results in distortions which, in general, impact unfairly on the domestic operators because the obligations of non-domestic transport operators are not being enforced.

For journeys with a stopover within a Member State of the EU, the possibility arises of different VAT treatment between the operators of that Member State and other operators. These discrepancies have implications for the competitive position of different operators within the same mode.

Also, where the domestic leg of an international air journey is not taxed in practice (for example, in France when a single ticket covers a domestic "connection"), an additional distortion is introduced between air and rail in the domestic market.

This is likely to be occur where there is an important HSR network which competes with air, such as France (although the French fiscal authorities have introduced a number of exemptions for specific cross-border HSR routes in an apparent attempt to address this distortion). However, elsewhere in the EU, such distortions are likely to become more significant as the HSR network develops in the future. The incidence of "tailor made" VAT provisions, designed to combat inter-modal distortions, may grow.

To summarise, the distortion from differing VAT treatment is greatest where competition between modes occurs. The largest magnitude of distortion for example, occurs in the HSR segment where competition is greatest with at most 296,000 passengers affected by 2005. The magnitude of the distortion in the long-distance leisure market is almost as large with at most 192,000 passengers affected.

Overall, the effect of different VAT treatment of modes has a non-negligible effect on competition between modes.

2.1.4 ***What is the effect of the differences in the right of business to deduct tax on travel expenses?***

The imposition of VAT should not affect demand for business travel if the business is able to recover the VAT. The extent to which the imposition of VAT will affect demand for business travel is, therefore, dependent upon whether the VAT can be recovered by the business.

There is considerable variation in the regulations covering the deductibility of tax on transport expenses incurred by businesses. Six Member States do not permit deduction of tax incurred on business travel. Even in those Member States where the tax is deductible in principle, many businesses do not do so because of the requirement to obtain documentation which can be burdensome, or because their business activities do not give rise to a right to deduct VAT.

From an economic perspective, these variations, in principle, are a form of competitive distortion because, *ceteris paribus*, travel costs in these Member States that allow deduction of tax are likely to be lower, reducing costs to business and giving them a competitive advantage.

Furthermore, for businesses as a whole, passenger transport costs form a small proportion of total costs. One official estimate suggests that transport forms no more than 5–10% of an average business's cost structure so that VAT costs for passenger transport purposes, are likely to be very small indeed and have little effect on the ability of most businesses to compete.

Under the current system, the study revealed that many businesses, particularly non-EU businesses, forego their right to tax deduction or refund (even in circumstances where a full entitlement arises). Where, on a single ticket, a tax charge arises in more than one Member State, the documentary requirements for tax deduction are viewed as cumbersome and the issue is not usually pursued by business purchasers of travel services. The inconsistent rules for tax deduction, and the variety of documents required to support that tax deduction, appear to add to businesses' costs unnecessarily.

In terms of the quantitative significance of the competitive distortions arising from the existence of different rules relating to the deductibility of input VAT, the analysis on the HSR routes suggests that even in the worst case scenario these are very modest (around ±0.1% of the current/future HSR segment). In view of the fact that the HSR segment covers the vast majority of journeys where business travellers have a choice between alternative modes of transport (excluding the car), the results for the whole of the intra-EU business passenger transport segment are likely to be of a very similar magnitude.

In economic terms, therefore, the study research has revealed that the scale of this distortion is quite small; less than 0.1% across the scale of full tax deduction (in all Member States) to no tax deduction (in all Member States).

2.1.5 ***What would be the practical, economic and fiscal effects of each taxation option in the intra-EU market under either***
a) a harmonised VAT rate across modes and Member States?
b) the existing VAT rates in Member States?

The study explored how each of the following taxation options would work in practice under a harmonised and multi-VAT rate scenario arrangements and examined the scope and basis of taxation as well as the likely economic and fiscal effects of:

- taxation at the place of departure;
- taxation at the place of arrival;
- taxation at the place of establishment of the supplier; and
- taxation at the place of establishment of the customer.

2.1.5.1 *a) Harmonised VAT rates*

Harmonisation has the effect of removing the scope for one Member State to gain at the expense of another as a result of imposing a low VAT rate. However, the operator option will give scope for a potential competitive advantage to arise for non-EU operators unless a mechanism is found to bring them within the scope of the EU regime. Unless such a mechanism is implemented, it is anticipated that demand for EU operators' services will fall by between 1.4% and 2.2%. In theory it may also be difficult to collect VAT revenues on non-EU operators in the departure/arrival and customer options.

With respect to the wider economic effects on demand volumes, gross turnover etc, the impact of harmonising VAT rates will clearly depend on the rate chosen and its effect will vary according to the market under consideration. If a positive rate is chosen, then the impact on transport markets in the zero or low rate Member States is likely to be negative, since this will result in rising costs and prices, whereas the effect on Member States with the higher rates are more likely to be beneficial.

The study revealed that harmonising VAT rates across modes and countries at a level of VAT close to current rates is likely to have larger economic effects than moving to the alternative taxation options under existing rates. This is because, in the case of harmonisation,* all *operators would have to levy VAT rather than just some as is presently the case. This, in turn, would lead to bigger changes in costs and prices and bigger effects on demand volumes etc.

In terms of the demand profile, and modal share, a harmonised rate will see a shift away from sea and air markets. Sea travel will be affected to a significant extent since it predominately embraces leisure travel. There is likely to be a noticeable shift towards rail, particularly HSR, in the medium-distance sector. In the long-distance sector, there is likely to be a significant shift towards "direct", rather than "connecting" services.

For countries with a high initial rate of VAT on rail and coach travel, harmonisation will have the impact of increasing the competitiveness of rail travel. In terms of particular routes, the medium distance HSR segment will be most affected with significant mode shifts towards rail occurring. The other medium distance segment will be affected, but due to smaller amount of competition between modes, the amount of shift will be considerably lower.

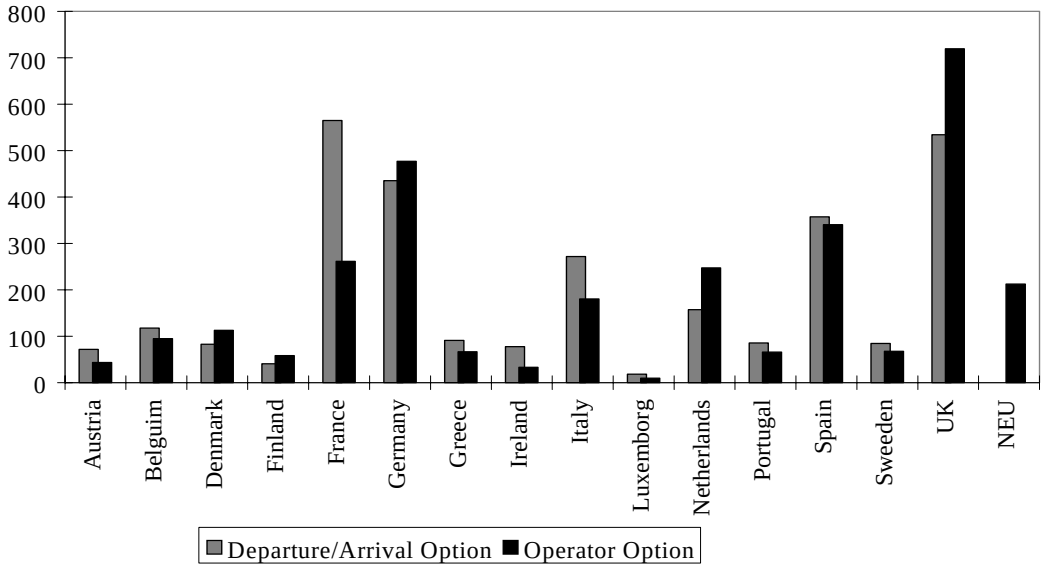
The study concludes that the choice of harmonised rate will be very important if any shift in the VAT regime is not to have a significant impact (positive or negative) on the intra-EU transport market. For instance, the air/coach/rail segment will suffer a 2.8 million passenger loss if an 8% harmonised VAT rate is implemented (or around 2% of the estimated traffic).

Under each of the taxation options, the effect of harmonisation with a uniformed rate of 8% impacts most on the air sector which accounts for 92% of the intra-EU market in value terms. Furthermore, since VAT increases in the air sector will occur for all Member States, the effects at the country level are broadly similar in percentage terms.

Overall the total market, under the departure/arrival and operator options suffers a fall in passenger demand of 7.1 million passengers while VAT revenues collected by the EU fiscal authorities increases to 3,049 million ECU (an additional 2,990 million ECU). While in terms of profitability, the market experiences a loss of 5.7% of gross turnover, or 2.3 billion ECU.

Fiscally, certain Member States would gain significantly (the UK would generate additional VAT revenues of 534 million ECU under the departure and arrival options, rising to 727 million ECU under the operator option) whereas others would gain by a smaller amount (France would generate additional VAT revenues of 565 million ECU under the departure and arrival options, falling to 261 million ECU under the operator option). Under both departure/arrival and operator options, the fiscal authorities of France, Germany and the UK collect half of all revenues. The VAT revenues are shown in figure 1 for all Member States under both options.

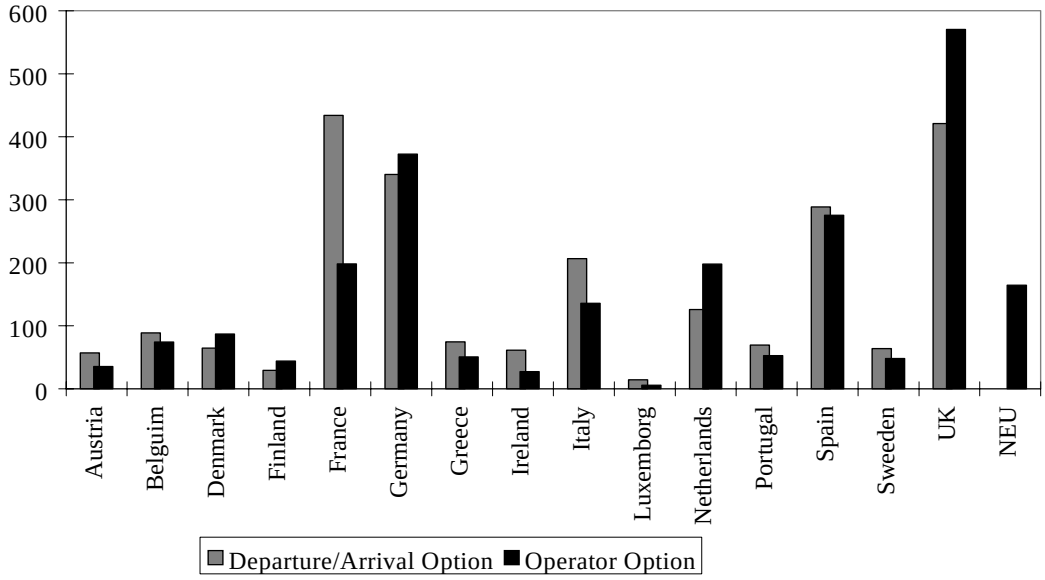
Figure 1 - A comparison of options: revenue collected by fiscal authorities (departure/arrival option) and revenue paid by operators (operator option) - (1994 values, millions ECU)



Source: KPMG analysis

In terms of net losses experienced by country and by operators, a similar picture arises which is shown in Figure 2.

Figure 2 A comparison options: net losses by country (departure/arrival option) and operator (operator option) - (1994 values, millions ECU)



Source: KPMG analysis

Under the customer option with a harmonisation VAT rate, two effects contribute to make the growth in VAT revenues smaller than under the departure/arrival and operator. Firstly, non-EU customers are likely to escape the tax as it will be very difficult to enforce the VAT rate for these passengers. Secondly, it may also be difficult to collect VAT from EU customers using non-EU operators. If non-EU operators are brought within the scope of the taxation then total VAT revenues collected by the EU fiscal authorities are approximately 5% lower at 2,890 million ECU, as non-EU customers are still outside the scope of the VAT regime.

2.1.5.2 *b) Existing VAT rates*

The study analysed the effects of each of the taxation options under the present, multi-VAT rate arrangements with respect to practical, economic and fiscal impacts.

Where existing VAT rates are maintained, the departure and arrival options could have the effect of increasing existing distortions by raising the effective rate of VAT paid by the taxed modes for intra-EU travel involving Member States which levy a positive rate of VAT on some, but not all modes. It would not however, make any difference to the existing competitive position of operators providing services in the domestic and EU-third country travel markets.

For example, a rail journey from Brussels to London, under the departure option, would attract a 6% Belgian VAT charge, whereas the London to Brussels journey would be VAT-free. The reverse would apply under the arrival option. At present, the effective VAT rate is 2% for both journeys.

Fiscally, Germany would benefit most, realising an additional 20 million ECU from intra-EU traffic (out of a total EU rise of 54 million ECU). The effect elsewhere is likely to be minimal. In competitive terms, Germany suffers the largest reduction in demand (by 207,000 passenger trips). By contrast, France experiences an increase in demand of 134,000 passenger trips.

Overall, the impact of a switch to the departure or arrival options under the current regime produces a marginal increase in the overall level of demand, with a very small shift towards rail and coach travel. Total demand changes by less than 1%.

In addition, a net loss of less than 1% of gross turnover is experienced in the market. However, even though these losses are small in relation to total gross turnover, if it is assumed that profits account for 5–10% of gross turnover, they begin to look more significant.

The operator option provides a potential incentive for operators from Member States where VAT is low or zero-rated to enter the markets where operators from Member States with high VAT rates currently provide transport services (in order to exploit cost advantages arising from the different VAT regimes). Non-EU operators may also be tempted to register in low rate or zero-rated Member States to exploit this distortion.

While competition through entry is a theoretical possibility, the extent to which entry into "high-rate" markets by "low rate" operators would actually take place would depend on barriers to exit and entry in any given market and the importance of price competition. It is, therefore, most likely that there would be increased competition in the air and coach sector where these barriers are relatively low, but less likely in the rail market where such barriers are high.

Under the operator option, the impact on demand profile is similar to that of the departure/arrival option. In terms of VAT revenues, Germany gains by 42 million ECU, Belgium by 11 million ECU and Spain by 10 million ECU. Others (notably France) suffer a reduction in VAT revenues.

The customer option makes relatively little difference to existing competitive position of operators, except to the extent that one airline (for example) may be more dependent on EU price sensitive markets than another. German operators suffer the largest reduction in demand (293,000 passengers) but German VAT revenues grow by 53 million ECU; France gains 80,000 passengers but loses 5 million ECU in VAT revenues.

In terms of wider economic effects, these are driven by price changes that come from changes in VAT. Given the size of price changes under consideration, the effects on any given transport market are likely to be small. The biggest effects are likely to be under the operator option where new non-EU or "low rated" EU operators enter, or expand into a given market.

2.1.6 *What would be the impact of the application of a uniform (positive) rate of VAT on passenger transport on the domestic EU market?*

In the domestic market, urban trips dominate the market, accounting for over 84% of all trips and 60% in terms of gross turnover. Thus, the impact of a harmonised VAT rate in

the domestic market will be determined predominately by gross turnover and the current taxation regime in place within the urban area.

The impact of a harmonised VAT rate of 8% will be largely neutral, in terms of competition between modes, irrespective of the taxation option adopted. However, the effect on demand across the EU varies from a 3.3% reduction to a 1.7% increase.

In terms of VAT revenues, a rate of 8% will raise an additional 3,672 million ECU above the current revenues of 7,536 million ECU.

The most significant changes in magnitude terms occurs for the UK which currently imposes zero rates of VAT on all domestic travel. Under harmonised rates, demand falls by 2.3% with a consequential fall in profits of 2.7% gross turnover. Large proportional falls also occur for Ireland, Denmark and Luxembourg but as these countries have much smaller markets, the magnitude of the changes is considerably less.

Although relatively modest changes in passenger demand occur, any reduction in demand for public transport in urban areas is likely to have significant consequences in terms of the additional congestion costs involved, as passengers switch to private cars.

Where existing VAT rates are maintained, the departure and arrival options will make no difference to the existing competitive position of operators providing services in the domestic market.

2.1.7 ***What would be the impact of the application of a uniform (positive) rate of VAT on passenger transport within the EU and to what extent would this policy damage the European transport industry with regard to third country operators?***

This question is most relevant for the air sector, since that is where competition between EU and non-EU operators is most frequent and intense and where intra-EU transport represents a significant proportion of the overall business. The answer to this question in part depends on the type of VAT system that might be introduced. Under the operator or customer option, the impact on EU operators could, in theory, be more damaging than under the other options.

In reality, the scale of the negative effect on EU based operators is likely to be dependent on the rate of VAT levied and the existence of secondary rules that would require non-EU based operators to register within an EU Member State for VAT purposes.

Under all taxation options, competitive distortions between direct and indirect air services will be introduced if the VAT rate is applied to legs within the EU, while journeys commencing within the EU and terminating outside the EU are not subject to VAT. Since non-EU operators have a greater market share of these direct services, demand for services offered by in the non-EU operators will increase.

If a harmonised rate was in force and anti-avoidance provisions rigorously applied, then there would be little or no difference in the treatment of operators on the grounds of their place of establishment. The economic competitive effect would, therefore, be neutral.

If anti-avoidance provisions were not effective, between 1.4% and 2.2% of demand would shift from EU-based airline operators to non-EU airline operators. For other modes, since the penetration of the EU market by non-EU operators is less widespread, the effect will be less marked.

If existing VAT rates are maintained, the departure and arrival options will make no difference to the existing competitive position of operators providing services in the international travel markets assuming that a return journey comprises two separate supplies: the outward and inward legs.

3 Conclusions

This section summarises the main conclusions which have emerged from the study of VAT on passenger transport within the EU.

The transport market

The EU passenger transport market consists of 31 billion passenger trips. Over 30 billion are in the domestic sector while the intra-EU market accounts for around 158 million passenger trips. In terms of the key indicator of interest *gross turnover*, the intra-EU market is more significant, due to the larger distances involved, with a turnover of ECU 41 billion compared to ECU 231 billion for the total EU market.

Competition

Across Member States the transport market is not homogenous and tax measures that affect the competitive position of alternative modes in different ways will have differing consequences for different Member States.

Competition between modes is only possible where appropriate infrastructure exists now or in the future. Where competition is high taxing different modes or operators with varying rates of VAT is likely to have some distortive effect on competition between modes. Where there is little or no competition between modes, it is possible to levy different rates of VAT without giving rise to significant competitive distortions.

VAT induced distortions

The economic distortion of differing VAT treatment is greatest where competition between modes occurs. The HSR segment experiences the largest magnitude of distortion with at most 296,000 passengers affected by 2005. Overall, the effect of different VAT treatment of modes has a non-negligible effect on competition between modes.

VAT deductibility

The imposition of VAT should not affect demand for business travel if the business is able to recover the VAT. The extent to which the imposition of VAT will affect demand for business travel is, therefore, dependent upon whether the VAT can be recovered by the business. The scale of this distortion is quite small; less than 0.1% across the scale of full tax deduction (in all Member States) to no tax deduction (in all Member States).

The intra-EU market: harmonised and existing VAT rates

In the intra-EU market, harmonising VAT rates across modes and countries at a level of VAT close to current rates is likely to have larger economic effects than moving to the alternative taxation options under existing rates.

For a harmonsied VAT rate scenario, under the departure/arrival and operator options the EU fiscal authorities collect 3,049 million ECU (an additional 2,990 million ECU) in VAT revenues. The fiscal authorities of France, Germany and the UK collect half of all revenues. Under the customer option 2,890 million ECU is collected as non-EU customers are outside the scope of the VAT regime. Overall, the effect of harmonisation is dominated by the air sector which accounts for 92% of the intra-EU market in value terms.

In the multi-VAT rate scenario, the departure/arrival option raises 112 million ECU (an additional 53 million ECU) for the fiscal authorities while the operator options raises 113 million ECU (an additional 54 million ECU).

Non-EU operators

For routes consisting entirely of EU operators, the impact of a harmonised rate under the operator option will be identical to that under the departure/arrival options. For routes with non-EU operators present the impact will also be identical provided that the non-EU operators are treated consistently and brought within the scope of VAT. Unless such a mechanism is implemented, it is anticipated that demand for EU operators' services will fall by between 1.4% and 2.2% as demand shifts to non-EU operators.

Under all taxation options, competitive distortions between direct and indirect air services will be introduced if VAT is applied to legs within the EU and if journeys commencing within the EU and terminating outside the EU are not subject to VAT.

The domestic EU market

In the domestic EU market the impact of a harmonised VAT rate of 8% will produce a change in demand across the EU varying from a 3.3% reduction to a 1.7% increase. This is likely to have significant consequences in terms of the additional congestion costs as public transport passengers switch to private cars.

European Commission

A study of the VAT Regime and Competition in the Field of Passenger Transport

Final report

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Contents

1 Introduction: study objectives

1.1 **Background**

In 1992 the European Commission (the "Commission") announced its intention to present to the European Parliament and the Council a report evaluating the overall situation regarding VAT on passenger transport, taking account of developments in the transport sector and having regard to the proper functioning of the internal market.

At present, passenger transport is taxed on the basis of distance covered in each Member State and tax is collected at internal frontiers. Many different tax rates apply to passenger transport across the EU with some Member States applying exemptions and zero-rates. Even within the same Member State competing modes of passenger transport may be taxed differently.

The current arrangements are considered to be unsatisfactory in the context of the single market. Further, with the abolition of frontier controls the tax has become difficult to collect and impossible to enforce effectively. In consequence, this study explores the economic, fiscal and practical effects of a number of alternative taxation structures for passenger transport services performed within the EU.

1.2 **Study objectives**

There are five key study objectives:

- To provide an overview of the structure and characteristics of the EU passenger transport sector. This is presented in Chapter 2.
- To analyse the size of the competitive market between the differing modes of transport, in between particular high-speed rail transport and air transport, in order to determine whether the nature of the competition permits the application of different tax rates to the different modes of transport. The study findings are outlined in Chapter 3.
- To determine the deficiencies of the current taxation system (the "distance" option) which arise from the differing VAT treatment of different modes of transport (for domestic, intra-EU and international journeys) and from differences in the right to deduct input VAT, and to provide a quantitative assessment of these deficiencies. The study findings are outlined in Chapter 4.
- To determine the economic and fiscal effect of each of the following taxation options, under the existing, multi-tax rate system and under a uniform positive rate of tax:
    - taxation at the place of departure (the "departure" option);
    - taxation at the place of arrival (the "arrival" option);
    - taxation at the place of establishment of the supplier (the "operator" option); and
    - taxation at the place of establishment of the customer (the "customer" option).

  The study findings are outlined in Chapter 5.

- To determine the impact of the application of a uniform (positive) tax rate on passenger transport within the EU, and in particular the extent to which such a policy would damage the EU transport industry, including airline and maritime operators, with regard to third country operators. The study findings are provided in Chapter 6.

1.3 **Methodology**

The methodology for the study comprised a five stage process:

- first, data gathering to provide an overview of the European transport market and passenger flows and to identify, *inter alia*, competitive issues between modes of transport so as to provide a preliminary assessment of whether this would allow differing tax treatment between modes;
- second, data validation to identify the key implications of each of the taxation options for the different markets and modes;
- third, route modelling to enable the impact of potential changes to the taxation regime to be assessed;
- fourth, economic analysis based upon qualitative research, together with route modelling; and
- fifth, fiscal analysis aimed at assessing the impact of VAT under the taxation options within two different scenarios: the present system of multiple rates and a uniform rate system.

Detailed notes on the study methodology and route modelling can be found in Appendix 1.

1.4 **Report structure**

This report is structured as follows:

- first, a separate Executive Summary which sets out the study objectives, the emerging findings and the next steps;
- second, the main report which sets out, in detail, the work undertaken to enable the preliminary conclusions to be reached;
- third, the appendices which set out, in more detail, the study methodology, estimates of the size of passenger transport segments and the results of the route and fiscal modelling; and
- fourth, the annexes which comprise copies of the questionnaires and case studies used by the KPMG research team in conjunction with EU transport operators and trade associations.

2 Overview of the EU passenger transport market

2.1 **Introduction**

In this chapter a broad overview of the EU transport market is provided. The aims are:

- to set the scene for the study by putting the transport market into context relative to other industries across the EU;
- to identify the major demand and supply characteristics of the main non-car passenger transport modes – air, rail, coach and other public transport[1]; and
- to identify some of the major differences in transport patterns across alternative modes and across the different EU Member States.

The aggregate market is examined first, followed by each of the three modes identified above in more detail. The majority of the statistics presented relate to the example year of 1994, but in some instances due to lack of appropriate data it has been necessary to use other years.

2.2 **The size of the EU transport market**

The European transport sector makes a significant contribution to the EU economy. Taking the transport sector as a whole (i.e. including freight traffic), Eurostat[2] have estimated that in 1992, the contribution of the sector to the EU economy was just over 4.1% of GDP, a figure which is equivalent to approximately ECU 212 billion. This percentage contribution to GDP has remained fairly constant, between 4 and 4¼%, since 1980.[3]

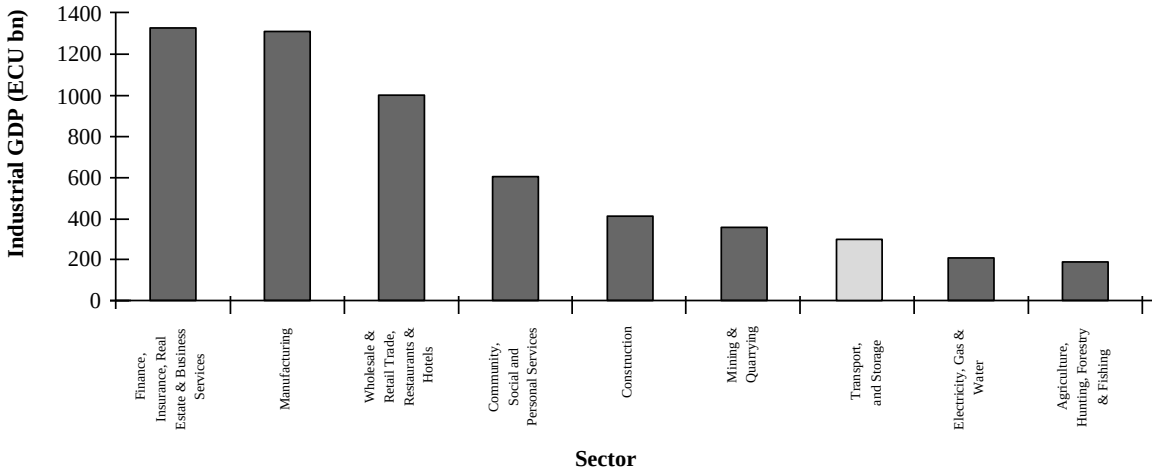
Figure 2.1 illustrates the relative significance of the transport and storage sector, which covers both passenger and goods transport, in overall EU GDP.

[1] Coach includes both scheduled and non-scheduled services and other public transport includes urban transport by bus, metro, tram and rail.

[2] Panorama of EU Industry 1997

[3] No breakdown is available of the proportion of passenger transport to the total figure.

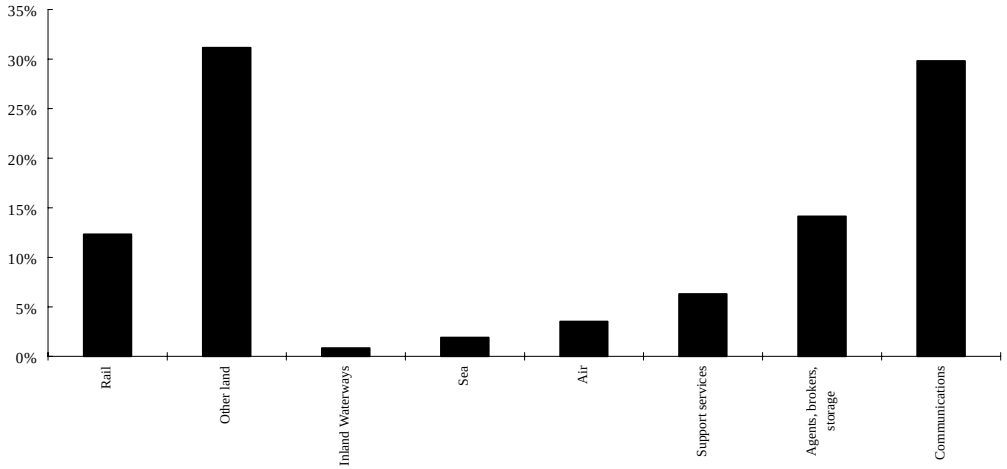
Figure 2.1: EU industrial GDP by sector, 1991



Source: KPMG analysis based on UN National Accounts data, OECD Economic Outlook

In terms of employment, transport services across the EU accounted for some 6 million jobs in 1992 – a figure which is equivalent to about 4¼% of EU civilian employment or 8¼% of EU employment in services. Figure 2.2 shows the distribution of employment by main mode for the EU in 1992.

Figure 2.2: Employment in transport and storage – share by mode 1994



Source: Panorama of EU Industry 1995/96, 1997

The figure shows that by far the biggest employer among the major modes is "other land transport", which includes buses, coaches and urban transport. After this, the next biggest employer is rail, with air, sea and inland waterways each accounting for less than 5% of employment. However, it is also noticeable that a significant proportion of employment in the transport services sector is accounted for by the categories of agents brokers and storage and other support services.

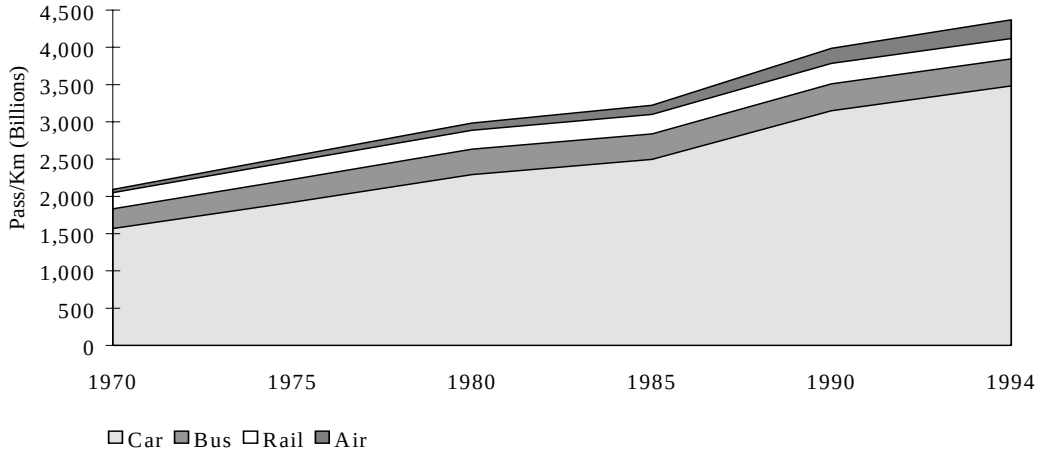
This distribution will differ slightly for the passenger only market. In particular, the share of the market will fall for sea, inland waterway and "other land" modes, which has a large proportion of employees in the goods sector, and increase for the air sector which deals primarily in the passenger market. The next section presents a more detailed analysis of the passenger only segment of the European transport market.

2.3 The size of the EU passenger transport market

This section presents an overview of the size of the passenger only segments in various markets. Ideally, the key indicator of interest would be gross turnover, but this is not possible as published data is unavailable or difficult to collect. Passenger kilometres and passenger numbers have, therefore, been used. These statistics are a good proxy and provide a good indication of the likely trends in gross turnover.

In 1994, total passenger transport at the EU level (including international journeys originating or terminating in the EU) exceeded 4,250 billion passenger kilometres[4], a figure which is equivalent to more than 12,000 kilometres for every person in the EU. Figure 2.3 shows the evolution of the EU15 passenger transport market by main mode, excluding sea and inland waterway, over the period 1970-1994. From this figure it is apparent that EU passenger transport is dominated by the private car. In 1994, close to 80% of all passenger kilometres were undertaken by private car, with rail, air and buses/coaches all accounting for a broadly equal share of the remaining market.

Figure 2.3: EU passenger transport market, by mode 1970–1994



Source: DG VII EC Transport Data Pocket Book, European Commission

Note: Figures cover domestic, intra-EU and international journeys

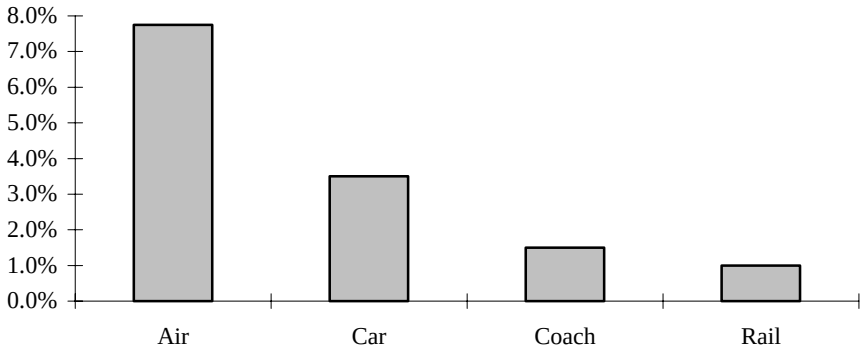
Examination of Figure 2.3 shows that the EU passenger transport market has more than doubled between 1970 and 1994. In fact, across all modes, passenger transport volumes

[4] Revenue figures for passenger transport services are not available. We do provide an *estimation* of the approximate turnover by mode, in Chapter 3. Two possible measures are available, the number of passenger trips and the number of passenger kilometres travelled. However, information across the alternative modes is more commonly presented for the latter, passenger-kilometre measure. So for the aggregate market we present figures based on passenger-kilometre figures but give the number of passenger trips, where possible, when we look in more detail at the individual mode markets.

have grown at an average of just over 3% per annum. This compares to an average growth rate for GDP of just over 2½% per annum over the same period. This suggests that factors such as technological advance and changing social patterns have contributed to increased travel as well as a general increase in wealth.

Taking the 1970–1994 period as a whole, by much the fastest growth has been experienced by the air sector, as shown in Figure 2.4.

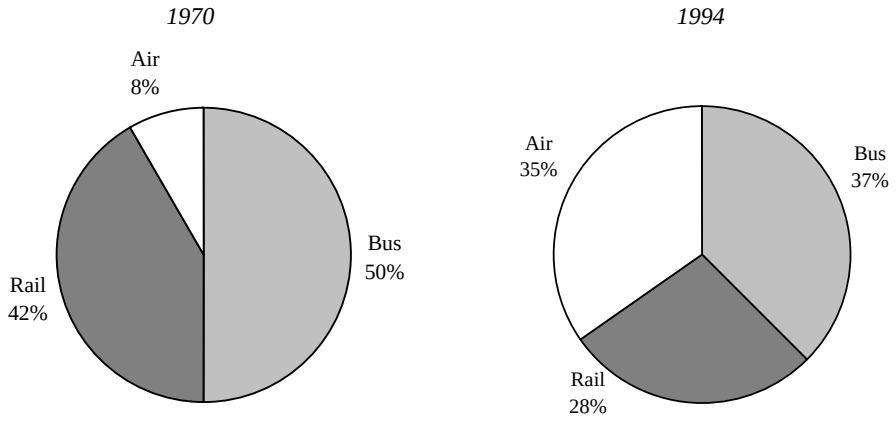
Figure 2.4: Average annual growth rate in passenger kilometres, by mode, 1970–1994



Source: Based on figures in DG VII EC Transport Data Pocket Book, European Commission

Figure 2.5 compares the shares of the EU passenger transport market attributable to each mode in 1970 and 1994, excluding the private car.

Figure 2.5: Market shares by mode, excluding car, 1970 and 1994 (passenger kilometres)



Source: Based on figures in DG VII EC Transport Data Pocket Book, European Commission.

In 1970 the bus and coach sector dominated the market, accounting for half of all passenger kilometres travelled, while rail accounted for a further 42%. The air sector therefore took just an 8% share. In 1994, however, the market shares of both the rail and the bus and coach sectors have fallen by more than 10 percentage points. The passenger

transport market is now split almost equally between the three modes. Since air travel is used only for medium to long distance journeys, air travel will have a much higher share in these segments compared to the market as a whole.

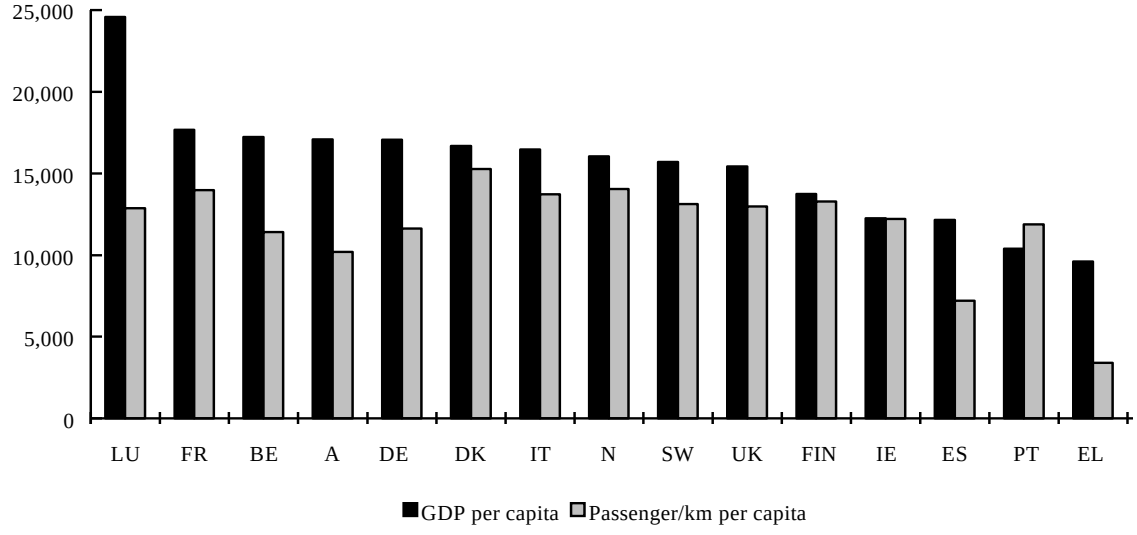
In summary, the private car dominates in the aggregate European passenger transport market, with close to 80% of all passenger kilometres being travelled by this mode. Once the car is excluded, however, the remaining market is shared roughly equally between rail, air and bus. Passenger transport by inland waterway and sea is not significant in any Member State when compared to the other modes. The figures also show that, while the rail and coach sectors have been declining in relative terms, the growth of air transport has been very rapid, accounting for around one third of travel in 1994, from less than one tenth in 1970.

2.3.1 *Demand for passenger transport analysed by Member State*

Examination of these aggregate figures at the Member State level, reveals that the volume of passenger transport demand varies considerably across Member States. Excluding the private car, the Netherlands is the nation whose people travel the most, averaging almost 4,500 passenger kilometres per head in 1994. The nation that travels the least is Greece, where the average was 1,380 passenger kilometres per head in 1994. If the private car is included then the Danes top the league table with more than 15,250 passenger kilometres per head (see Figure 2.6) although Greece still remains at the bottom with 3,400 passenger kilometres per head.

A key factor in explaining this variation in passenger travel demand across Member States is the variation in GDP per capita and income levels (particularly relevant for the non-business market). This relationship is illustrated in Figure 2.6 with Member States plotted in descending order of GDP per capita and demand for transport shown as passenger kilometres per head of population, to adjust for the large variation in population.

Figure 2.6: Passenger kilometres per head and GDP per capita, 1994 (000's ECU)



Source: Eurostat, DG VII EC Transport Data Pocket Book, European Commission.

A simple correlation suggests that just over 50% of the variation in passenger demand in Europe can be "explained" by variations in GDP per capita with higher levels of per capita income associated with higher levels of demand for passenger transport. Not only can the residents of richer countries afford to travel further and more frequently, but richer countries are likely to have more developed transport infrastructures. However, half of the variation is still "unexplained" suggesting that other influences are also important including:

- time, which is a serious constraint on the amount of travel that may be undertaken, since beyond a certain level, increased income may only produce modest increases in transport demand, as travellers (particularly leisure travellers) have no more time available to travel;
- variations in social tastes, population density, physical geography and geographical location within the EU - all of which will impact on the final demand for passenger travel; and
- long-run influences such as the globalisation of international industry and the moves towards completion of the European single market.[5]

2.3.2 *Demand for passenger transport by mode*[6]

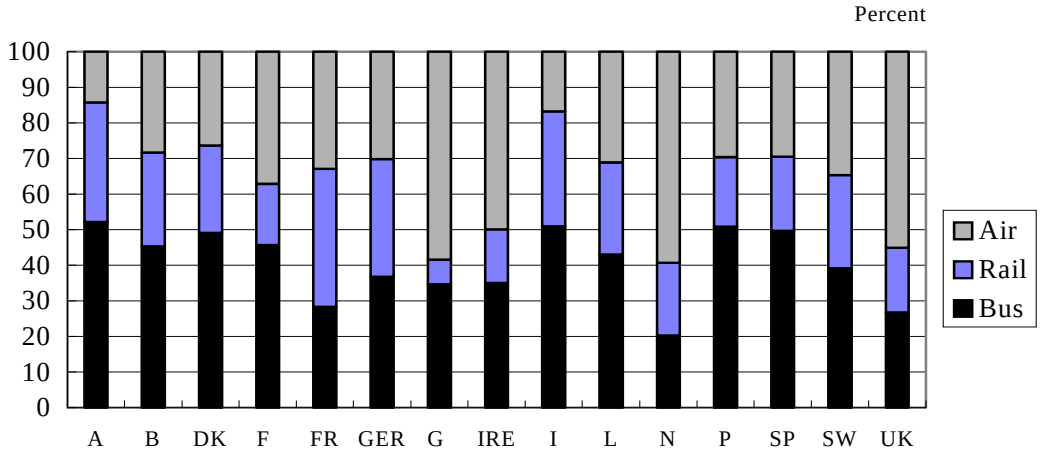
Figure 2.7 shows that, just as the overall demand for passenger transport varies significantly across Member States, so the market shares of the alternative modes is also far from uniform. These figures cover, domestic journeys within EU Member States, international journeys between Member States (intra-EU travel) and journeys from Member States to third countries outside the EU[7].

[5] See, for example, Pan European Transport, Derek Done, 1996.

[6] Appendix 2.1 provides a summary of the key operational characteristics by mode.

[7] A fuller discussion of the individual segments, intra-EU and domestic, is presented in Chapter 6.

Figure 2.7: Modal shares in passenger kilometres, by EU Member State, 1994



Source: Based on figures in DG VII EC Transport Data Pocket Book, AEA Yearbook (1995)

The market share of bus travel ranges from 50% or more in Austria, Italy and Portugal, to just 20% in the Netherlands. In the case of rail, the largest market share is observed in France (39%), but in Greece rail has just 7% of the market. Finally, the share of air travel ranges from between 55% and 60% in the Netherlands, Greece and the UK to only 14% in Austria. This figures need to be interpreted with care since air travel may often be the only option available for long international trips (especially inter-continental trips) and the distances involved mean that passenger kilometres may overstate the importance of air travel.

The variations in the modal shares, shown in Figure 2.7, will also reflect other factors, in particular the importance of the main airport of Member States with respect to the wider European and International markets, for example:

- in the UK, London has a key role as a hub in the European and international air market with 72.9 million passengers handled by London Heathrow and London Gatwick in 1994, which was 25% more than Paris (Charles de Gaulle and Orly), the next biggest European destination; and
- in the Netherlands, Amsterdam handled 23.6 million passengers in 1994, and is the fifth biggest airport in the EU; and the Dutch airline KLM, was the third biggest European carrier in 1994 on the North Atlantic route. These factors go some way towards explaining the importance of air travel in the Netherlands, shown in Figure 2.7 above.

Another reason for the variation in modal shares will be differences in individual Member States' physical geography and transport infrastructure, for example:

- in the UK and Ireland, regardless of the modal share for domestic transport, international transport will be dominated by air; and
- in Greece, with its many islands, the potential for rail travel will be limited and air, coach and private car travel (including sea crossings) will predominate.

Public policy towards different modes of transport, including tax treatment and support for infrastructure development and maintenance, will also play a role.[8] For example, the development of High Speed Rail (HSR) in France explains the relatively large rail share in that country.

In summary it is clear that the passenger transport market is not homogenous across Member States, with the relative sizes reflecting factors such as:

- the degree of development of Member States;
- differing social tastes and physical geography; and
- the relative importance of the alternative modes of transport within Member States.

This means that ***any proposed tax measure which impacts differently on different modes of transport is likely to have different implications for individual Member States***. This issue is examined in more detail later, when the existing distortions arising out of the current VAT system and the way it is applied to passenger transport in the EU is discussed. In the following sections, a more detailed overview of the air, rail, urban public transport (including coach traffic) and sea (and inland waterway) markets is presented.

In terms of future prospects, Table 2.1 provides an overall summary of the growth forecasts for passenger transport across the EU. It should be noted that no distinction is drawn between classic rail and HSR.[9]

Table 2.1: Forecasts of growth in domestic and intra EU passenger transport market, in passenger kilometres, 1994–2000 (annual percentage change)

Mode of transport	**Average annual growth in passenger transport (%)**
Domestic	
- Road (excluding private car)	-1
- Rail	+3
- Air	+4
Intra-EU	
- Road (excluding private car)	+1
- Rail	+4
- Air	+5
Total	**+4**

Source: Pan-European Transport, Derek Done, 1996

2.4 Air transport

This section provides a brief overview of the air passenger market in terms of passengers numbers, employment, infrastructure and the commercial and legal structure. A description of market structure and regulation with respect to competition between and within the various modes of transport is presented in Chapter 3.

[8] A discussion of the main VAT distortions is presented in Chapter 4.

[9] Further estimates on the projected growth of HSR only are provided in section 2.5.

2.4.1 *The size of the air market in Europe*

The data presented in this section uses, where possible, 1994 as the illustration year (the latest year for which figures are available). It should be noted that the data therefore reflects the regulatory environment prevailing at that time, as measures to liberalise the market were only just beginning to be felt by operators[10].

2.4.1.1 *Scheduled services*

Table 2.2 presents an overview of the European air passenger transport market based on figures published by the International Air Transport Association (IATA) and the Association of European Airlines (AEA). In 1994, a total of 250 million passenger trips were made in the market (this figure includes trips to and from Europe).

Table 2.2: European scheduled air passenger transport market in 1994

		% share of passengers		
	Passengers (millions)	**EU national 'flag' carriers**	**Other carriers**	**of which: EU carriers**
All flights	250	63%	37%	*(1)*
- Domestic[11]	80	59%	41%	*26%*
- International:	170	65%	35%	*(1)*
- Intra-EU	71	79%	21%	*(1)*
- EU -third country	98	46%	54%	*(1)*

Source: IATA World Air Transport Statistics Number 40, AEA Yearbook 1995

(1) not available

Domestic and intra-EU traffic account for an equal proportion of overall traffic (around 30%) with EU–third country traffic accounting for slightly more. The table shows that ***the 15 major national carriers[12] (also called flag carriers) account for a significant share of all the markets that they operate in and dominate the market for travel between Member States***. In the domestic market, the flag carriers and the other EU airlines such as Air UK, Deutsche BA, Viva Air and Skyways together account for 85% of the market. Note, however, that ***in the EU–third country segment, EU national carriers have less than half of the market; this reflects the strong position of non-EU national and other carriers*** and the increasing role of other EU operators such as Virgin. Since 1994 the dominance of the flag carriers has fallen slightly as a result of liberalisation, with the entry of both small and large airlines particularly in the intra-EU market.

Figure 2.8 shows the market shares by flag carrier. By far the largest carriers are Lufthansa and British Airways, who each carried more than 28 million passengers in 1994. The Scandinavian airline SAS is next largest with 18 million passengers in 1994. Air France, Alitalia and Iberia all accounted for around 12–14 million passengers. With

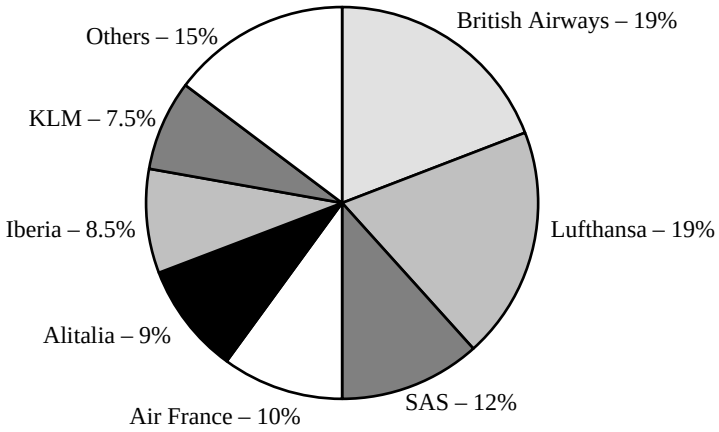
[10] This also has implications for economic and fiscal modelling (which also uses 1994 as the reference year) and these are discussed in the appropriate chapters.

[11] Note: Domestic trips include EU Member States and other European countries such as Switzerland and Norway.

[12] Including UK-based British Midland.

the exception of the Dutch airline KLM each of the other flag carriers accounted for less than 5 million passengers in 1994.

Figure 2.8: Market shares of major flag carriers in passenger numbers, 1994



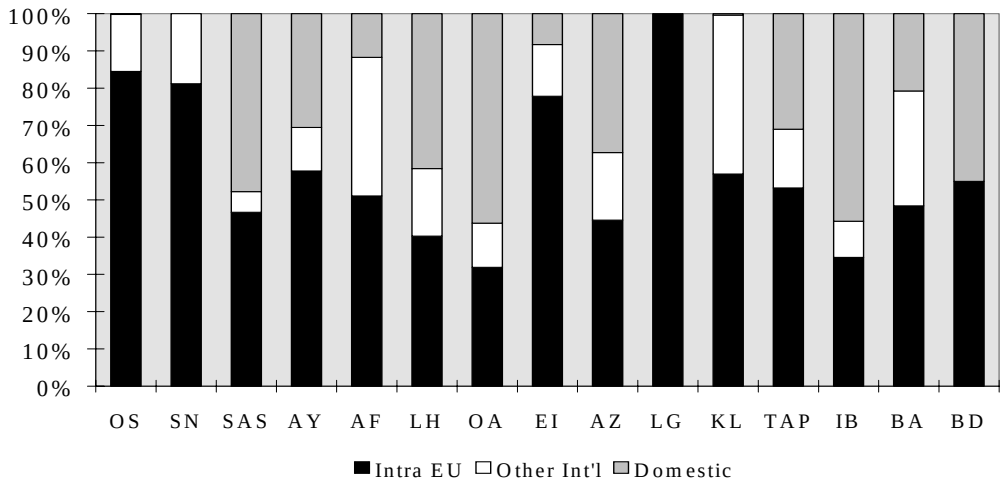
Source: Based on figures in AEA Yearbook 1995

Note: figures include all domestic, intra-EU and international journeys

Figure 2.9 shows the breakdown of the operations of the major carriers between domestic, intra-EU and EU-third country flights. Austrian Airlines, Sabena, Luxair and KLM all have no domestic operations, which reflects the small size of their home countries. Aer Lingus and Air France[13] domestic services account for 8% and 12% of passengers moved respectively. For the remaining carriers domestic routes account for between 21 and 56 % of passengers, with British Airways and Olympic Airways representing the low and high shares respectively.

[13] Does not include the subsidiary Air Inter, a domestic carrier, and therefore the share is slightly too low.

Figure 2.9: Scheduled flights of EU flag carriers by destination, 1994 (% share of passengers)[14]



Source: Based on figures in AEA Yearbook 1995

In 1994, British Midland and Luxair concentrated exclusively on the intra-EU market (including domestic flights). These companies offered no routes to destinations outside the EU. ***For the remaining airlines, intra-EU and domestic routes dominate their business, accounting for 80 % or more of trips for all but KLM, Air France and British Airways***. Of those airlines with a significant share of business generated from EU–third country trips, this type of route is most significant for KLM, where 43 % of passengers are transported to or from points outside the EU. For Air France and British Airways, this figure is 37% and 31 % respectively.

A schematic representation of the major flows of air traffic within Europe is presented in Figure 2.10. The map shows all the Member State to Member State flows representing more than 3 % of all intra-EU passenger movements, or (equivalently) more than 1 million passengers a year. Some 60–65 % of the total intra-EU air passenger flows are represented here.

Figure 2.10 shows:

- the important role of the UK, Germany and France, and
- the fact that most air transport is done over medium[15] to long-distance trips where the speed advantage of air transport is most pronounced, or where geographical barriers are present, such as water.

[14] OS=Austrian Airways; SN=Sabena (Belgium); SAS=Scandinavian Airline System (Sweden, Denmark, Norway), AY=Finnair (Finland); AF=Air France; LH=Lufthansa (Germany); OA= Olympic Airways (Greece); EI=Aer Lingus (Ireland); AZ=Alitalia (Italy); LG=Luxair (Luxembourg); KL=KLM (Netherlands); TAP=Air Portugal; IB=Iberia (Spain); BA=British Airways; BD= British Midland.

[15] In Chapter 3 a medium distance trip is defined as any trip of 300km to 1,000km.

Figure 2.10 inserted here

In fact, some 74% of capacity for European trips in 1994 was devoted to routes of over 400 kilometres. Of the remaining 26%, almost 20% was offered on routes that overflow water or were in direct competition with high speed rail links.[16]

2.4.1.2 *Chartered services*

There are some 35 chartered operators in the EU.[17] Many of these are wholly-owned subsidiaries of either the regional operators (e.g. Air UK Leisure) or flag carriers (for example, Transavia Airlines, owned primarily by KLM Royal Dutch Airlines).

Table 2.3 provides an overview of the key carriers. It is important to note that the concentration of north-west European operators in terms of market share is very high. As with the scheduled operators it is apparent that certain Member States such as the UK and Germany enjoy a comparative advantage. In the case of the UK, this is likely to stem from the more deregulated commercial environment.

Table 2.3 also shows that chartered air services carried 67.5 million passengers in 1993; chartered air services account therefore for more than a quarter of all passenger traffic carried by European-based scheduled and chartered operators. The majority of this market is likely to fall within the intra-EU leisure market and reflect the holiday patterns and preferences of the citizens of the north European Member States. This suggests that ***the intra-EU charter market, which is satisfied by EU carriers, is of a similar magnitude to the intra-EU scheduled market operated by the major flag carrier airlines***. Moreover, with respect to revenue passenger kilometres, the magnitude is greater with estimates placing market share close to 65%[18].

Following European deregulation, charter airlines as separate entities were expected to disappear. However, the inclusive tour has remained a popular product and is still widely available. In addition the charter sector's position was to some degree strengthened by the greater protection given by competition laws and the removal of the licensing distinction between charter and scheduled services in the early 1990s. This was reflected in the collective profit for EU operators in the sector of US $300 million (1992-1993) compared to the substantial losses experienced in the scheduled market over the same period.

[16] AEA (Yearbook, 1995, p 26).

[17] AEA Yearbook 1995

[18] Charter Airlines in Europe, EIU Travel and Tourism Analyst No 4 1995

Table 2.3: The European chartered air market, 1994

Airline	Country	Passenger-km (millions)	Passengers 000's
Britannia Airways	UK	18,850	7913
Condor Flugdienst	D	16,188	5500
Virgin Atlantic AW	UK	12,231	1704
Monarch Airlines	UK	10,732	4803
Air 2000	UK	10,700	4201
LTU Int'l Airways	D	10,634	3324
Airtours Int'l	UK	9550	3520
Hapag-Lloyd Flug	D	9450	4031
Martinair Holland	NL	7953	1823
Corsair	F	7003	1206
PremiAir	DK	6749	1103
LTU-Sud Int'l Airways	D	6435	2310
Sobelair	B	6209	688
Caledonian Airways	UK	5970	1912
Aero-Lloyd Flug	D	5597	1200
Spanair	E	5367	2906
Air Europa/Espana	E	5078	3436
Transavia Airlines	NL	3995	2005
Germania	D	3807	1346
British Midland AW	UK	3611	5174
Air Liberté	F	3400	700
Transwede	S	3182	2033
Lauda Air		3123	827
Air Europe SpA	I	2746	182
Futura	E	2473	1255
Oasis AL	E	2216	1351
Air UK Leisure	UK	2046	1145
Excalibur	UK	1900	765
Maersk Air	DK	1865	1729
Air Berlin	D	1545	1048
EuroBelgian AL	B	1454	837
LTE Int'l Airways	E	1196	488
Sterling European AL		1166	533
Air Holland Charter	NL	1000	500
TEA Italy	I	1000	500
Euralair	F	883	679
Centennial	E	864	575
Air Belgium	B	784	173
Deutsche BA	D	491	950
Total		**199,440**	**76,281**

Source: Panorama of EU Industry 1997

2.4.2 ***Employment***

Table 2.4 show direct employment in the airline sector, for each country and flag carrier, against the number of passengers carried by the flag carrier. Most of the Member States with high levels of employment in the airline sector, are northern European. All countries that employ more than 50,000 are northern states, although Italy with nearly 43,000 employed is comparable. In terms of the relative efficiency of each of the flag carriers, measured by passengers carried per employee; UK, Germany, Italy, Denmark and Ireland are the most efficient with approximately between 600 and 900 passengers transported

per employee, whereas France and Portugal are the least efficient with only around 400 passengers transported per employee.

Table 2.4: Airline employment (thousands) and passengers carried (millions)

Airline	Employment (Total)	Employment (Flag carrier)	Passengers (Millions)
UK	71.1	53.5	34.7
France	57.3	37.5	15.6
Germany	57.0	42.3	30.0
Italy	42.7	18.7	14.5
Netherlands	28.6	23.6	11.7
Spain	25.8	23.0	13.4
Belgium	14.7	9.8	4.3
Portugal	14.4	8.8	3.5
Greece	12.7	10.4	5.8
Denmark	9.7	6.4	5.4
Ireland	4.9	5.2	3.7
Luxembourg	1.5	1.3	0.5

Source: AEA Yearbook 1995 and Panorama of EU Industry 1997

2.4.3 *Infrastructure*

Infrastructure for the airline sector can be thought of in terms of the physical factors required to service aircraft, such as airports, and the 'softer' infrastructure such as air traffic control space. In both cases, capacity constraints appear to be growing. This has, in part, been fuelled by the record growth in demand for air travel that has been witnessed in the last few years as the sector has come out of recession. In the case of air traffic control (ATC), Eurocontrol, Europe's largest ATC grouping, has warned that the system is in major need of increased investment and harmonisation in order to avoid being overwhelmed in the near future.

Table 2.5 provides a league table of the EU's busiest airports. As with the airlines, it can be seen that there is a significant concentration of traffic in the north and north-western EU states. Heathrow became established at an early stage as the biggest "hub" (airports where many air routes converge and passengers can interchange between flights) in Northern Europe and competes with Frankfurt, Paris Charles de Gaulle and Amsterdam Schipol. Once an airport is established as a hub it can be very difficult for other airports in the local region to compete with it.

Large airlines have protected their positions by seeking to dominate hubs as airlines which operate well co-ordinated flights through a hub can offer passengers a wide range of journey opportunities. Scheduled airlines are attracted to the hub because the availability of interline passengers increases the size of the market available there. Other airports in the local region are reduced to serving the charter market, scheduled services with a very local catchment, or services which cannot obtain access to the hub.

Table 2.5: Passengers handled by European Airports, 1995

Airport	Country	Passengers handled (millions)
London Heathrow	UK	54.4
Frankfurt	Ger	38.2
Paris Charles de Gaulle	Fr	28.4
Paris Orly	Fr	26.7
Amsterdam	NL	25.4
London Gatwick	UK	22.5
Rome Fiumicino	I	21.1
Madrid	Spa	20.0
Manchester	UK	15.0
Dusseldorf	Ger	15.1
Munich	Ger	14.9
Stockholm Arlanda	Swe	13.4
Palma de Mallorca	Spa	14.7
Copenhagen	Den	14.7
Brussels	Bel	12.6
Barcelona	Spa	11.7
Milan Linate	Ita	10.8
Athens	Gre	9.9
Hamburg	Ger	8.2
Vienna	Aus	8.5
Berlin	Ger	8.3
Tenerife Sur	Spa	7.4
Helsinki	Fin	7.3
Las Palmas	Spa	7.8
Nice	Fra	6.1
Dublin	Ire	8.0
Lisbon	Por	6.2
Malaga	Spa	6.2
Glasgow	UK	5.4
Birmingham	UK	5.3
Stuttgart	Ger	5.2
Marseilles	Fra	5.1
EU	Total	464.6
Other Europe		
Zurich	Swi	15.3
Istanbul	Turk	12.1
Oslo	Nor	8.4
Geneva	Swi	6.2

Source: Panorama of EU Industry 1997

Forecast figures from the AEA[19], indicate that demand at Europe's most congested airports is likely to double between 1993 and 2005. With respect to airport development, plans are afoot to increase capacity at individual airports across the EU. This process is primarily driven by Member State governments with a certain amount of assistance and co-ordination from the EU.

[19] AEA Yearbook, 1995

2.5 Rail transport

2.5.1 *The size of the EU rail market*

In 1994, the European rail passenger transport market was measured as some 4.9 billion passenger movements[20]. Of these the vast majority were concerned with domestic trips. Using an analysis done by Eurostat for Intra-EU passenger flows (excluding Austria, Finland and Sweden) in 1990[21], it is possible to estimate figures for intra-EU trips in 1994. ***Table 2.6 summarises the EU rail passenger transport market and shows that, in relation to domestic trips, the volume of cross-border travel is very small***. Recall that intra-EU air trips were estimated at 71 million (see Table 2.2), so that ***rail travel accounts for around 25% of all intra-EU air and rail trips***. To some extent the variation in rail travel seen above might be expected to reflect the physical rail infrastructure of the Member States. While there is a reasonably clear relationship between the total number of passengers carried and the length of the national rail networks, the number of passengers primarily reflects the bigger populations of the geographically larger Member States. A comparison of rail use with rail density (length of rail network per square kilometre) is shown in Figure 2.12, and suggests no clear relationship.

Table 2.6: The rail market in the EU12, 1994

Type of trip	No of passengers (millions)	% of 2nd class trips
All journeys	4,945	97
– Domestic (Urban and Non-Urban)	4,923	97
– Intra-EU	22	98

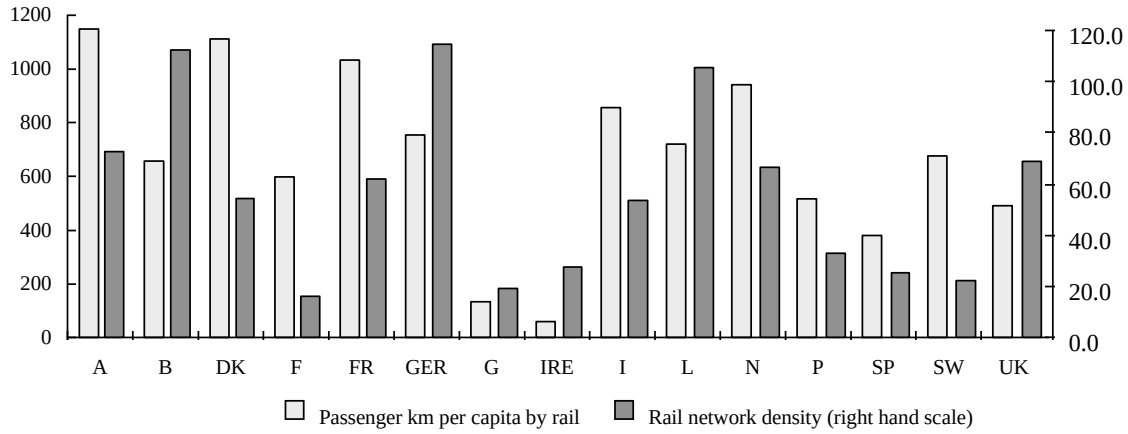
Source: UIC, Eurostat, KPMG estimates. Figures refer to EU12 i.e. they exclude Austria, Finland and Sweden.

A closer examination of the rail market at the Member State level, shows that rail is most heavily used in Austria, Denmark and France, followed by Italy and the Netherlands.

[20] International Union of Railways 1994. This includes all domestic, intra-EU and international trips made on the national railways of the EU15. These are OBB, SNCB, DSB, VR, SNCF, DB, AG, CH, NIR, FS, CFL, NS, CP, RENFE, SJ, BR and EPS.

[21] Transport Annual Statistics 1970-1990

Figure 2.12: Passenger Kilometres per head by rail, 1994



Source: UIC, Eurostat. Note: Rail network density is km of rail track per 1,000 square kilometres.

2.5.2 *The arrival of High Speed Rail(HSR)*

The most important development in the European passenger transport market over the next decade or so is the planned development of high speed rail. HSR networks are already operational in a number of EU countries: France, Germany, Italy and Spain. ***By 1996, these networks extended to nearly 9,000 km of track[22] and accounted for over 30 billion passenger kilometres.***

The French carrier SNCF originally dominated the market, accounting for around three quarters of all HSR travel in 1993, meeting what was primarily a domestic demand. Since then, the position has changed with the development of services such as Eurostar (the HSR link between London-Brussels and London-Paris) which demonstrated the potential market for international HSR.

The success of HSR across the EU will be driven by the extension and construction of the necessary infrastructure, much of which is designated as part of the Trans-European Networks or TENS[23]. Meeting in Essen in December 1994, the European Council of Heads of State and Government identified 14 priority TENS projects. Of these 14, 10 involved rail or rail/road combinations and 5 were specific HSR projects[24] as summarised below:

- Berlin–Nuremberg/Munich–Verona high speed rail;
- Paris–Brussels–Cologne–Amsterdam–London high speed rail;
- Spain–France, north and south from Madrid high speed rail;
- Paris–eastern France–south west Germany, including Metz–Luxembourg branch, high speed train;

[22] *Source: Panorama of EU Industry 1997*

[23] The name given to the Community initiative to improve the transport network across the EU

[24] The TransEuropean Network: Transforming a Patchwork into a Network, European Commission 1995

- Rotterdam–Dutch/German border conventional rail;
- Lyons–Turin-Milan–Venice-Trieste high speed rail;
- Oresund fixed rail/road link between Denmark and Sweden;
- Cork–Dublin-Belfast conventional rail;
- Nordic Triangle, multi-modal corridors; and
- the UK West coast main line.

Figure 2.13 gives a diagrammatic representation of these projects and shows how these ten rail or rail/road TENS priorities will change the look of the HSR network in Europe once completed. ***Overall, the projects will bring a further 12,500 km of lines with the major expansion occurring over the 1998-2008 period.***

The report completed for the Community of European Railways (CER) in 1993 on the future impact of the HSR network on the market for passenger transport indicated that ***in a best-case scenario, the HSR network could increase the amount of rail travel (over 80 km) by 142 billion passenger kilometres (72%) compared with the level of demand given an unchanged network. This would reduce demand for intra-European air services by 17% compared to a scenario with no change in the HSR network***.

In overall terms, the development of the HSR rail network is considered likely to have a relatively modest impact on the total market share of the motor car as a proportion of all passenger transport traffic over 80 km in trip length. Estimates suggest a reduction in market share of around 10% from 71% (1988 figures) to 61%.

The share of revenue generated by the high-speed network is estimated to increase from 10% of all rail revenue (1988) to as much as 70% by 2010. In ECU terms this would be reflected in a change in the market's value from an estimated ECU 13 billion in 1988, to ECU 25 billion in 2010 (at 1988 prices).

[insert Figure 2.13 based on map of Europe showing high speed journeys currently available in EU]

2.6 **Urban public transport**[25]

This term, as defined by Eurostat, covers the urban public transport sectors of railways, trams, metros and buses as well as scheduled and shuttle coaches.[26]

Table 2.7 provides a summary of the number of enterprises, their turnover and number of people employed for the EU12 in public transport. It can be seen that there are very large variations in the number of enterprises providing services. This reflects the extent of private provision and deregulation. For example, the UK figure of over 3,700 players reflects the large number of local/regional bus companies which sprang up following deregulation in 1988.

Table 2.7: Public Transport operators in the EU, 1992

Member State	No of operators	Turnover (M ECU)	Employment
Belgium	265	n/a	17,061
Denmark	398	n/a	n/a
Germany	3,056	2,808	n/a
Greece	320	n/a	30,250
Spain	1,148	2,137	44,825
France	174	2,588	74,789
Italy	1,117	1,788	117,129
Luxembourg	3	5	581
Netherlands	33	485	26,900
Portugal	97	583	30,218
United Kingdom	3,686	3,343	n/a

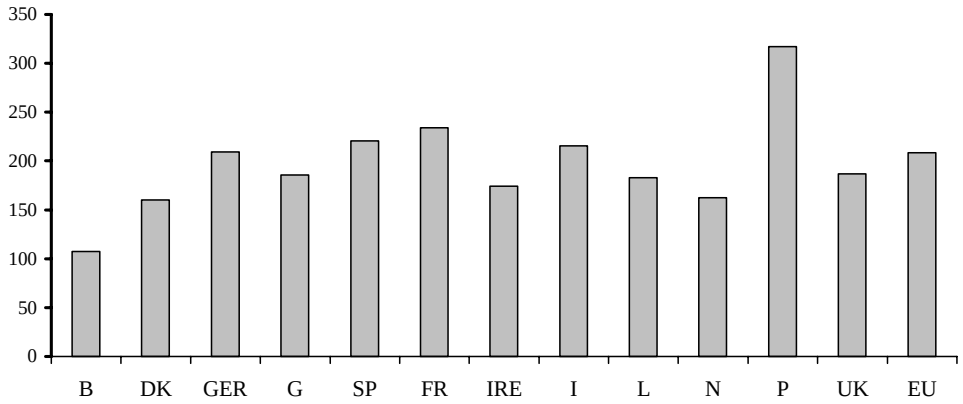
Source: Panorama of EU Industry 1997

Turnover figures in this sector reflect to a lesser extent the higher expenditure and mobility rates of the northern European States (and indeed their size). Italy and Spain both have large public transport markets. This is reflected in Figure 2.14.

[25] An urban area is defined as a town or city with a population greater than 100,000.

[26] The sector may therefore overlap slightly with the rail sector.

Figure 2.14: Passenger trips per head of population served



In terms of the modal split between different forms of passenger transport, Table 2.8 provides an indication of the share by type of service and the proportion of vehicles used to deliver services.

Table 2.8: Importance of different modes of public transport, 1994

Mode	Proportion of passenger trips (%)	Proportion of Vehicles (%)
Urban and suburban buses	52	63
Commuter rail and local train services	14	13
Underground railway	24	15
Light rail	9	9
Trolley bus	1	1

Source: Panorama of EU Industry 1997

Within each of the public transport modes - buses, coaches, light rail and trams, and heavy rail services, a number of key differences have been identified in terms of the market served:

- buses tend to serve short-distance markets in urban areas where average journey length is relatively short and frequency is high;
- coaches operating scheduled services mainly work inter-urban routes and where chartered tend to serve longer-distance markets;
- trams tend to compete in the same market as bus services. In addition, their integration/transformation into light railways means that they are also competing with heavy rail services, as they increase penetration into the slightly longer-distance markets outside urban centres; and
- heavy rail services are also undergoing change in the markets they serve as infrastructure improvements allow them to act as metros in urban areas and as longer distance commuter services (their traditional markets) which are more inter-urban.

2.7 EU coach market

The coach travel market, which includes both urban and inter-city bus and coach services[27], is summarised in Table 2.9. The large variance in passenger kilometres reflects the development of the transport market (more developed countries tend to have lower per capita bus traffic), population size, national policies and private attitudes towards the car.

Table 2.9: Passenger kilometres in the European Bus and Coach Market, 1994

Country	Passenger-Km (Billions)	% Market Share
Austria	13.7	4%
Belgium	5.3	1%
Denmark	9.5	3%
Germany	67.5	19%
Greece	5.2	1%
Spain	38.1	11%
France	42.6	12%
Ireland	2.8	1%
Italy	81.5	23%
Luxembourg	0.5	0%
Netherlands	13.9	4%
Portugal	12.6	4%
Finland	8.0	2%
Sweden	9.3	3%
United Kingdom	43.0	12%
Total	353.5	100%

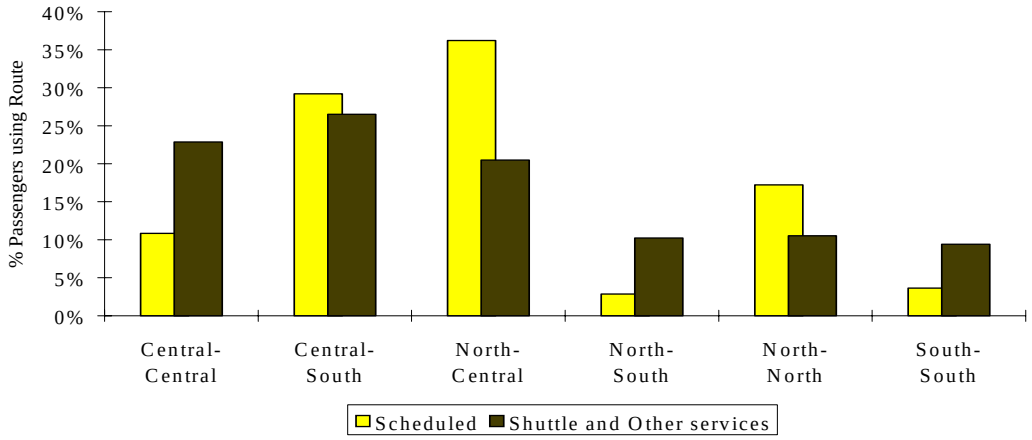
Source: Panorama of EU Industry 1997

Within the international coach market the European Conference of Ministers of Transport in 1987 defined three types of services. These are: scheduled services operating on a timetable basis over specified routes; shuttle services consisting of repeated trips for groups of passengers (for example migrant workers); and occasional or other services such as those provided to holiday-makers as part of a packaged trip that might include accommodation, travel and other costs. The total intra-EU coach market is estimated at approximately 5 million passenger trips in 1996[28] and represents a relatively small proportion of intra-EU and third country travel; the flows are summarised by route in Figure 2.15.

[27] This sector includes all regular and occasional services.

[28] Source: Bundesverband Deutscher Omnibusunternehmer, Eurolines, F.B.A.A, Fachverband Der Autobusunternehuungen and Koninklijk Nederlands.

Figure 2.15: Intra EU coach market shares by route, 1996



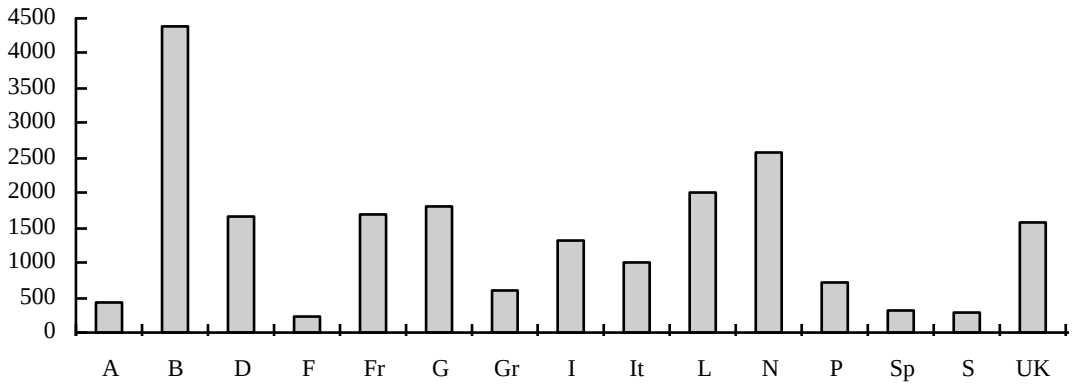
Source: Bundesverband Deutscher Omnibusunternehmer, Eurolines, F.B.A.A, Fachverband Der Autobusunternehuungen, Koninklijk Nederlands and KPMG analysis.

Note: North is defined as Denmark, Ireland, UK and Sweden; Central as Belgium, France, Germany and Netherlands; and South as Greece, Italy, Spain and Portugal.

2.7.1 *Infrastructure*

Buses and coaches operate almost entirely on the public highway. Coach services are much more dependent on motorway and trunk road infrastructure than buses. Overall, the EU15 have a dense road network averaging 1,000 km (all types) for every 1,000 square kilometres of area (1992 data). Within the EU however, there is considerable variation in the levels of density and also the amount of motorway (see Figure 2.16). For example, Portugal has a road density of 207 km per 1,000 square km whilst Belgium has nearly 4,130 km to the same area of land.

Figure 2.16: Road density by Member State, 1992



Source: Eurostat

Note: Road density is km of road per 1,000 square kilometres.

2.8 Sea and inland waterway transport

2.8.1 *The size of the EU sea market*

In all EU Member States, passenger transport by sea or inland waterway accounts for a very small proportion of the total market[29]. According to the UN[30], sea transport accounts for only ¾ of a percentage point of total passenger/kilometres in Denmark and Finland. This figure is even lower in all other Member States. According to the same source, only Italy has a significant level of passenger transport by inland waterway, just over half of a percentage point of all passenger kilometres travelled in Italy although the passenger transport arrangements in Venice may distort these figures. However, there are a number of important corridors, particularly on the periphery of the EU, where ferry traffic is significant. The most heavily used corridors are:

- Baltic corridors between Denmark and Germany to Scandinavia;
- Channel crossings, including the Dover-Calais short crossings and the Portsmouth-Caen western routes;
- Adriatic routes between Italy and Greece;
- North Sea routes to Scandinavia and Holland;
- Irish Sea services; and
- Mediterranean routes between numerous islands.

The total intra-EU sea market in 1994 consisted of 85 million passenger trips and around 3.4 billion passenger kilometres. The vast majority of trips take place between UK-France, Denmark-Sweden, Denmark-Germany and Finland-Sweden.

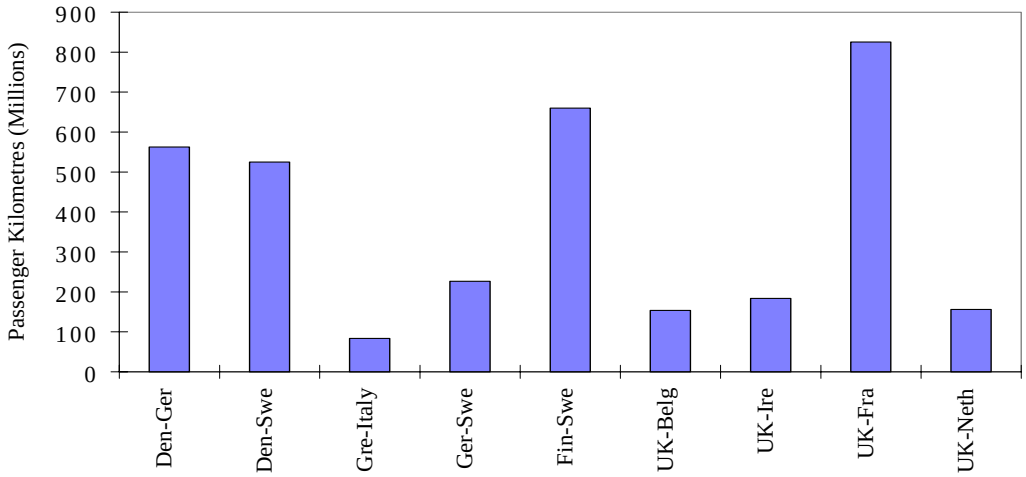
The relative markets sizes, in terms of passenger kilometres, of these major corridors is summarised in Figure 2.17. The largest markets are again the Channel and Baltic crossings but UK-France and Finland-Sweden account for a larger share compared to Denmark-Sweden as the average trip length between their countries is much larger. However, in the near future these routes are likely to face major reductions as the Channel Tunnel becomes more competitive and the Oresund bridge between Copenhagen and south Sweden is completed.

It is also worth noting, however, that this is a relatively a high number of trips in comparison to intra-EU passenger trips by other modes. This is because of the inclusion of travel by private car in the data, and the possible existence of double counting; for example passengers travelling by ferry between Denmark-Sweden with a main mode of rail or coach could appear in both sea and rail or coach passenger statistics.

[29] The Panorama of EU Statistics says of the sector: "As passenger transportation is limited to a few ferry boats across rivers and boats for inner cruises, this part of the sector is very small and will not be considered in this monograph."

[30] UN Annual Bulletin of Transport Statistics for Europe and North America – 1995 – Table 3B.

Figure 2.17: Sea market shares, excluding domestic, (1994 passenger kilometres)



Source: ShipPax database 1994/95

In addition to the international corridors there is a significant domestic sea market, for example the Greek inter-island links in the Aegean Sea, which is estimated to be broadly in the region of 121 million passengers in 1994[31]. However, the complexity of domestic route networks, and the large number of small crafts used, makes it difficult to measure the market size accurately.

Within the sea passenger market, the distinct type of transport and markets served can be segmented into the following categories:

- roll-on roll-off ferries;
- hovercraft, hydrofoils and catamarans; and
- cruise liners and other leisure sailing.

Roll-on roll-off ferries (the largest sector) caters for foot passengers, freight, accompanied cars and coaches. The success of these has been due to the efficient transit service provided for freight operators, rather than high quality services to the passenger market. The hovercraft category provides rapid, passenger-only, services catering for the small business and top-end leisure market, while cruise liners and leisure sailing take the remaining share of the market. For a selection of EU countries, turnover and the number of enterprises in the shipping industry, which includes both goods and passenger transport, is shown in Table 2.10.

[31] Source: ShipPax database 1994/95

Table 2.10: Sea transport operators in the EU, 1992

Member State	No of enterprises	Turnover (M ECU)
Belgium	188	1737
Denmark	544	3138
Germany	570	1226
Greece	446	n/a
France	155	3885
Italy	273	2713
Luxembourg	16	n/a
Netherlands	486	2415
Portugal	21	212
Finland	61	1217

Source: Panorama of EU Industry 1997

2.9 Inter-Modal Transport

Inter-modal transport where two or more modes is used for a particular journey is very common throughout the EU. It is also a very important issue in the domestic market. Many governments have created policies, such as park and ride facilities to encourage people to use public transport. Such facilities allow people to park their car on the edge of large conurbation's and continue their journey to the centre by public transport. These polices are currently high on the political agenda and are viewed by both government and the public as environmentally friendly in the way they help to reduce pollution and traffic congestion in city centres.

In the context of the intra-EU market, an example of inter-modal transport is a person travelling Gothenburg–Hamburg who uses a number of different modes to complete the journey. These could include: private car between Gothenburg and Helsingor; ferry foot passenger between Helsingor and Helsingborg; the coach mode travel between Helsingor-Copenhagen; and the rail mode between Copenhagen and Hamburg.

However, in terms of how passenger kilometres and numbers in the proceeding sections are presented, they are treated as four separate journeys. These are first, a domestic car trip; second, an intra-EU sea journey; third, a domestic coach journey; and fourth, an intra-EU rail journey. Thus, the level of inter-modal activity does not affect the statistics presented in this chapter for intra-EU travel. Further, the level of inter-modal activity is irrelevant as it is only possible to cross a frontier by one mode only.

2.10 **Conclusions**

The passenger transport market in Europe is not homogenous. Not only does the level of demand vary across the individual Member States, but the importance of the alternative modes is different in different Member States. Any tax measures that affect alternative modes in different ways will, therefore, have differing consequences for different Member States.

The European passenger transport market is dominated by the car and whilst this sector would not be directly affected by any changes to the EU VAT regime, the indirect effect on the sector could be significant as the mode's competitive position changes in relation to competing forms of transport.

In terms of the other modes of transport, the key conclusions are:

- within the air transport sector, the national flag carriers dominate the market for scheduled services for domestic and intra-EU trips, although this dominance has fallen very slightly since 1994. Domestic, intra-EU and international trips account for roughly equal proportions of the total number of trips, although international trips will account for a larger proportion of revenue, as they will be on average significantly longer;
- in the EU–third country segment, EU national air carriers have less than 50% of the market, reflecting the strong position of non-EU and other EU (non-national) carriers;
- the chartered air market is also significant, however, and accounts for around one quarter of the combined scheduled and chartered market operated by EU carriers;
- intra-EU trips are a much smaller proportion of overall trips for rail compared to air;
- HSR is an important potential development for the future. Studies on the impact of HSR have suggested that it is likely to take market share from both the private car and from air transport;
- the vast majority of trips are domestic. In the intra-EU rail and air passenger transport market, air accounts for approximately 75% of journeys. This is likely to change significantly as a result of the expansion of the HSR network infrastructure;
- the characteristics of each particular industry will need to be considered within the framework of any new taxation option and in the context of possible changes to the VAT accounting requirements;
- although there are a number of differences, in commercial, operational and legal terms between transport modes, it is anticipated that the draft framework devised for each taxation option should be capable of being implemented by all operators, irrespective of mode. However, specific modal characteristics (for example, the "Issuing Carrier" concept within the airline industry and the contractual position within the railway industry) may mean that Member States would need to adopt arrangements whereby operators other than the principal operator (or operators) account for the tax payable on passenger transport services provided within the EU; and
- the characteristics of the EU transport industry mean that clear definitions are required in a number of areas (stopovers, transit passengers, return journeys, place of

establishment etc) to ensure consistency of application of legislation across the EU as a whole.

These conclusions set out the key characteristics of the EU passenger transport market and form the basis for the assessment and analysis of the size and significance of the competitive segment and the current VAT-created distortions that follow in Chapters 3 and 4.

3 Competition in the EU passenger transport market

3.1 **Introduction**

One of the key objectives of the study is to assess the extent to which competition between different modes of transport may be affected by differences in the VAT treatment of different modes of passenger transport. In this chapter, the issue of competition between modes in both theoretical and practical terms is discussed, and the major areas where competition exists in the European passenger transport sector are identified. Building on the overview of the transport market presented in Chapter 2, some estimates of the size and importance of the segments where competition is greatest are presented. The chapter is organised as follows:

- first, a brief outline of the determinants of competition is presented involving
  - market and ownership structure, and
  - the regulatory environment;
- second, a segmentation of the passenger market to enable an assessment of where competition between modes is significant is made; and
- third, rough quantitative estimates of the size of the segments where competition exists are provided.

The primary emphasis of this chapter is inter-modal competition (i.e. competition between rail, air and coach), since the ultimate aim is to assess the impact of different VAT rates applied to different modes of transport. There are segments within the passenger transport market, however, where there is both inter-modal competition (e.g. between airline operators and HSR) and intra-modal competition (e.g. between airline operators). Moreover, competition increases with the number of operators on a route; thus, competition between rail and air will therefore be stronger in the Paris–London route (where more than 10 airline operators compete), compared to the Lyon–Madrid route (where only 1 or 2 airline operators provide passenger services – see Chapter 2).

3.2 **Factors determining the degree of competition in the passenger transport market**

3.2.1 ***General principles***

The most important factor in determining the degree of competition in any given market is market structure. This is generally divided into two groups and both are important for pricing and competition. Firstly, a vertical structure where competition takes place between different operators within the same mode and secondly, a horizontal structure where competition takes place between different modes.

Market structure will depend on the inherent cost characteristics of providing passenger transport services and in particular the relative significance of fixed costs [32]. Given the

[32] Fixed costs are those costs that are independent of the number of passengers transported, e.g. costs of maintenance of railway track and stations. In practice it is sunk costs that matter, i.e. fixed costs that are irrecoverable after exit (see S Sutton, "Sunk Costs and Market Structure", 1992).

large role of fixed costs in the operation of rail (costs of building and maintaining the rail track), there are significant economies of scale in rail passenger transport and therefore the structure of the rail market is, in general, very concentrated. In most Member States there is just a single operator. Air operators and coach operators face lower fixed costs (landing or aeronautical charges for air and fixed administration costs for air and coach), and in general the degree of concentration[33] would be expected to be lower[34].

Another key factor is the regulatory environment which will determine the ease with which small numbers of suppliers can operate anti-competitive agreements. Across Europe, national regulation has historically acted to limit competition by creating public monopolies or ensuring only small number of suppliers exist, especially in rail and air.

Even if there are two, three or four suppliers in a market, they may find it in their interest not to compete with each other but to collude and fix prices such that they share the market together. While anti-collusion legislation exists in most Member States, proving anti-competitive behaviour is notoriously difficult. While it is perfectly possible for two firms to compete, it is generally the case that the larger the number of suppliers, the greater the degree of competition that will exist[35]. This issue is discussed in more detail, for each of the modes air, rail, coach and other urban public transport, in the sections that follow.

3.2.2 ***Air***

Over recent years, there have been dramatic changes in all areas of the European air market. These changes are expected to continue in the future. To understand the full dynamics of this market, therefore, it has been necessary to describe in detail ownership, market structure, and regulation issues in terms of both historical and future trends within the air market. This section on the air market, therefore, is more extensive than for the other modes.

3.2.2.1 *Regulation*

Changes to the regulatory structure of the sector could best be described as incremental[36]. Following the moves by individual Member States such as the UK and Netherlands to deregulate air transport on UK-Dutch routes in the early and mid 1980s, the European Commission introduced a series of four packages, designed to bring non-liberalised Member States into line with the more progressive members.

Significant EU measures to liberalise the air transport market include:

- the Directive on Inter-Regional Air Services (July 1983). This liberalised access to routes between regional airports for aircraft with capacity for up to 70 passengers;

[33] Concentration is a combined measure of the number of firms in any given market and their market power. The lower the degree of concentration, the more competition there is likely to be.

[34] For a detailed exposition and some good examples see Chapter 10 of Begg, Fischer and Dornbusch, "Economics", 4th Edition.

[35] It is worth noting in this respect the recent referral to the UK Monopolies and Mergers Commission of the proposed merger between the two major channel operators, P&O and Stena.

[36] See, for example, discussion in Panorama of EU Industry 1997

- the 'First Package' which came into effect in December 1987. This measure relaxed the bilateral rules on equal sharing of capacity and reduced the powers of governments to regulate fares. It also gave open access to some 'fifth freedom' routes as extensions of services from an airline's home country (the latter provision allowed Aer Lingus to extend its Dublin–Manchester service to Milan);
- the 'Second Package' which came into effect in July 1990 gave further relaxations on similar lines to the First Package;
- the 'Third Package'. Provisions of the Third Package which came into effect on 1 January 1993 gave EU airlines open access to almost all international routes in the EU and gave airlines the freedom to set their own fares; and
- the 'Fourth Package' which came into effect in April 1997 gave EU airlines access to most domestic routes, the last significant barrier to competition within the EU.

A key point is that the most significant measure implemented so far (the Third Package deregulation of international routes within the EU) is relatively recent and its effects on the market are not yet entirely evident.

Member States have been responsible for negotiating bilateral agreements with non-EU states where the European Commission has not taken the lead role for EU wide agreements. This means that a significant part of the market available to EU airlines has not been directly affected by the EU liberalisation measures.

3.2.2.2 *Ownership*

Aviation has historically been subject to heavy government control and has been dominated by state ownership. In recent years, as the dual processes of privatisation and deregulation have intensified, there has been a change in the market structure. This change has been characterised by increased competition in certain parts of the market and a consolidation in the number of large scale operators[37].

There are three tiers to the scheduled market within the EU. These can be defined as:

- the flag carriers, many of which are still under some form of public ownership;
- non-flag carrying major airlines, for example, British Midland or Virgin; and
- the regional carriers, such as Air UK or Air Inter, and the point-to-point carriers, such as World Airlines.

As shown in Chapter 2, ***the dominant players in the European market are the flag carriers. Within this group, the market concentration is high; the top four operators account for around 70% of the flag carrier market***. In spite of this concentration, the number of airlines operating in the EU market is quite high; there are some 109 scheduled service providers in all[38].

Table 3.1 provides a list of the main EU scheduled operators and their ownership structure as well as the country of origin of the operator; within each broad ownership category, the airlines are ranked in ascending order of state ownership.

[37] Derek Done (1996), Pan-European Transport

[38] Panorama of EU industry 1997

Table 3.1: Ownership structure of main EU scheduled airlines, 1995

Airline	State ownership	Country
British Airways	0%	UK
Sabena	33.8%	Belgium
Luxair	36.5%	Luxembourg
KLM	38.2%	Netherlands
Lufthansa	40.6%	Germany
SAS	50.0%	Denmark, Sweden, Norway (ratio 2:3:2)
Alitalia	86.4%	Italy
Air France	99.3%	France
Iberia	99.8%	Spain
Aer Lingus	100.0%	Ireland
Olympic Airways	100.0%	Greece
TAP Air Portugal	100.0%	Portugal

Source: Panorama of EU Industry 1997

The table shows that 6 of the flag carriers are more than 50% state-owned with Air France, Iberia, Aer Lingus, Olympic Airways and TAP Air Portugal being virtually 100% state owned. Only British Airways can be classified as a 100% private company; Sabena, Luxair, KLM and Lufthansa are more than 50% privately owned. Against this background the EU flag carrier market might be expected to react relatively slowly to changes in market forces and market structure. In addition, customer loyalty towards their own national airline will act against services by other EU airlines, especially in the domestic market.

Despite the relatively high concentration of market share amongst the largest airlines, competition within the sector varies by route. On the London–Paris route, ICAO[39] figures suggest that 13 airlines operated services in 1994. The three biggest carriers were Air France, British Airways and British Midland, who shared just over 80% of the market. These figures suggest competition does exist on this route. On the other hand, 7 carriers operated on the Copenhagen–Stockholm route in 1994, yet SAS accounted for some 91% of passengers carried, suggesting that there is less competition here. Lyon–Madrid is an example of a significant route where only one carrier, Air France, operates services. A more detailed analysis of competition is provided in the next chapter.

3.2.2.3 *International links*

As a direct result of the changing regulatory structure, the creation of true multinational airlines and a handful of global consortia has become a distinct possibility. The airline industry is experiencing a period of consolidation and a growth in co-operation as alliances become the strategy most in favour.

The popularity of co-operation, through an alliance, merger or code-sharing agreement (the emphasis on equity links has been reduced) is particularly evident from the increase in their number and scale, rising from 280 in 1994 to 389 in 1996. The effect of these world-wide alliances, particularly transatlantic, has important ramifications for the European market which continues to be one of the world's three major markets both in its own right and as a major origin and destination location for flows between the American and Asia-Pacific regions.

[39] International Civil Aviation Organisation

The history of alliances starts with British Airways in 1987 when it signed a ground breaking code-sharing agreement with United Airlines; this, along with many of the older agreements, has subsequently been dissolved. After UA, British Airways engaged in an alliance with USAir, which is still in effect today but under increased pressure from the prospective alliance with American Airlines. Other key developments throughout the 90s include:

- Northwest and KLM alliance in 1992;
- United and Lufthansa alliance in 1994, joined later in the 'Star Alliance' by Air Canada, Thai Airways International, SAS and (potentially) South African Airways and British Midland in the future; and
- Delta, Austrian, Swissair and Sabena alliance in 1995, joined later by Singapore.

The success of the above alliances hinged upon exemption from US antitrust laws, given only if an open-skies agreement between the US and the country concerned was reached. For example in the Northwest/KLM alliance the initial open-skies agreement paved the way for US antitrust immunity and a successful alliance. At present, the proposed alliance between BA and American is subject to considerable delay because of regulatory concerns from US, UK and EU authorities. In particular, the UK and US administrations have experienced considerable difficulties in reaching a bi-lateral agreement on open-skies, irrespective of issues surrounding regulation at the EU level.

For the Delta group, antitrust exemption was granted as Belgium and Switzerland had already signed up to an open-skies agreement. In the Lufthansa case, the deal was conditional on acceptance of antitrust immunity, and with a German open-skies deal in March 1996 this was not long in coming.

By early 1996 six (Austria, Finland, Sweden, Denmark, Luxembourg and Belgium) of the EU Member States had signed up with open-skies agreements with the US. Recently this has enlarged to include Germany and Netherlands.

3.2.2.4 *Outlook*

Over the next few years, a number of important factors will affect the competitive structure of the market:

- the further deregulation of the sector;
- the anticipated privatisation of those airlines still in state ownership within the EU;
- increasing competition from Eastern European airlines and Asian based carriers that are likely to have a much lower cost base than their EU counterparts; and
- the increasing use of outsourced air carriers to depress operating costs.

External factors include:

- the emergence of HSR transport across the European continent; and
- the deregulation of the longer-distance scheduled coach market.

By contrast, however, factors whose impact will be to decrease competition will also grow in importance. Such factors include:

- the increasing trend towards strategic alliances;

- extended code-sharing agreements; and
- increased take-overs and equity swaps/stakes.

Such anti-competitive pressures are by no means new to the airline industry although they are likely to increase over time. The current view[40] is that at least in the short to medium term, competition and competitive pressures are likely to intensify in the EU air transport market, as a direct result of the deregulation due to come into force in April 1997. However, in the longer term greater pressures towards mergers and acquisitions (to improve or at least stabilise margins) might lead to a smaller number of airlines and thus an overall reduction in competition. Further, ***the combination of airport and airspace congestion means that the demand for landing slots will exceed supply. This could increase barriers to entry in the air transport segment and reduce the effective competition***.

3.2.2.5 *Low-cost air operators*

Although major scheduled operators are moving towards closer co-operation and as near to merging as anti-trust regulations will permit, liberalisation of the regulatory structure combined with a number of cost advantages for new entrants, has enabled some low-cost operators such as easyJet, Debonair, and Virgin Express to enter the market of scheduled low-cost service provision. Previously these operators have been satisfied with niche routes, but some are now offering low priced alternatives between larger city pairs such as Brussels-Madrid, Paris-London, and Amsterdam-London. In many cases, they are also competing on domestic routes. The further deregulation of the Fourth Package might well create more opportunities suitable to low-cost operators which a number are already actively considering[41]. Debonair and Virgin Express apparently intend to enter the German domestic market in the near future.

Table 3.2 summarises the profile of three key low-cost carriers. Operators tend to share some similar attributes such as a standard range of aircraft, and to some extent private (i.e. neither public sector nor publicly floated) ownership. Standardised aircraft types are arguably an important factor in reducing aircraft maintenance and training costs. Private ownership means that operators are less likely to be under the pressure to meet the demands of shareholders or political pressures of government that might be more important in other ownership structures.

[40] See, for example, "Is there a future for Europe's airlines?", Barton *et al* in the McKinsey Quarterly, 04/94 and V Pryce, KPMG, "The Current State of the Industry" speaking at the 3rd Annual Conference of the IEA, Dec 1995.

[41] Source: KPMG airline interview programme

Table 3.2: Summary of key characteristics of a selection of low-cost scheduled carriers

	EuroBelgian Airlines Express	easyJet airline co.	Ryanair
Established	1991 (charter) Late 1994 Low-cost scheduled	1995	1991
Ownership	From May 1996 Virgin European Airways 90%, former owners 10%	100% private	100% private (Ryan Trust)
Operating base	Brussels	London Luton	Dublin, London Stansted
Traffic	1.3m (235,000 scheduled) (1995)	1.6m[42](1996)	1995: 2.5m 1996 tgt: 3m
Finances	1995 rev BEF ECU 150m of which sched. ECU 18m pre tax profits BEF 5.mn (charter operations only)	1997[43] rev ECU 72m pre tax profits n/a	1995 rev ECU 121m, pre tax profits, ECU 2.4m
Fleet	737-300/400s (13) Up to 4 yrs old. Craft used for both scheduled and charter services	737-200s (5) owned	737-200s (11) Average age 14 yrs plus some wet leases[44]
Employees	n/a	c200 (1996)	595 (1995)
Spatial coverage in EU	Belgium, France, Italy, Spain, Austria	France, Netherlands, Spain, UK	Ireland, UK (Sweden from summer 1997)

Source: Travel and Tourism Analyst No. 3, EIU, 1996; updated from KPMG airline interviews 1997

Low-cost scheduled operators have succeeded in other markets such as North America by pursuing a strategy based on the principle of cost control. Staff and aircraft[45] are particularly important areas of controllable cost where these operators have tried to be more successful than the established and larger airlines. For example it has been estimated that these carriers achieve up to 50% unit labour cost advantages over unrationalised larger carriers[46]. Airline and labour costs, however, are somewhat cyclical in nature, falling as economic growth falls and rising during economic upturns. This phenomenon has in recent years allowed low-cost European operators the opportunity to enter and expand into new markets.

By drawing on a pool of skilled surplus labour released by the larger operators (themselves engaging in cost cutting) and the availability of cheap aircraft, these new operators have at least for the present been able to sustain low priced services on a number of EU routes. This view of the drivers of success is disputed by some of the airlines. easyJet for example claims that its labour and aircraft costs are broadly comparable to the larger carriers on a like-with-like basis but that it is in areas such as ticketless sales (where direct sales have taken over the role of travel agents), higher levels of labour productivity (less cabin staff needed with single cabin class) and higher aircraft utilisation where real cost savings are generated. Table 3.3 provides a

[42] Estimated for 1997

[43] Forecast outturn for 1997 calendar year

[44] Wet leased means that labour as well as equipment is leased. For example, flight crew and in some cases cabin crew (such as the Chief Purser) might be included

[45] French, "No Frills Airlines in Europe", TTA, 1996

[46] ibid

summary of where the cost savings are made and gives an indication of their contribution to total costs for low-cost and typical scheduled carriers[47].

Table 3.3 Variation in cost structure between easyJet and notional "big" carrier

Cost item	Number of full seats needed to cover cost item - easyJet and notional "big" airlines	Additional "big" airline costs	Additional full seats needed to meet other costs - for "big" airlines only
Advertising	12	Computer Reservation System fees	6
Pilots	6	Travel agent commission	6
Insurance	6	Expensive airports	6
Aircraft ownership cost	12	In-flight catering	6
Fuel	6	Ticketing costs	6
Telltales	6	Lower aircraft utilisation	6
Cabin crew	6	Extra cabin crew to serve business class passengers	6
Ground handling	6		
Airport landing fees	12		
Air traffic control fees	12		
Maintenance	12		
Total seats to meet costs - easyJet	96	Total seats to meet costs - "big" airline	138

Source: Based on "Why the big airlines cannot match our fares" in "easyCome easyGo", easyJet in-flight magazine, issue 4, February/April 1997. Based on an aircraft with total seating capacity of 138.

The table suggests that easyJet is claiming to be able to provide services with a cost structure up to 44% less than for a notional competitor. Their overall conclusion is that "...they [the big carriers] could never make money even if they filled every seat in their aircraft."[48]

This assessment of costs by easyJet has been in part behind its complaints to the European Commission about the allegedly predatory and misleading pricing strategies of other carriers on some of its routes. The response from the majors to low-cost scheduled carriers has been an aggressive strategy in pricing and seat availability for the leisure market. This allegedly predatory pricing has not been ignored; easyJet commenced proceedings against KLM in Autumn 1996 and Belgium VLM accused British Airways carrier City Flyer Express of predatory behaviour in January 1997. Even without this anti-competitive behaviour it is still difficult for smaller operators to compete against the majors which have large frequent flyer programs and a strong reluctance to give up unused airport slots. However, in some markets they have arguably been successful at changing the *status quo*. For example, both Air France and Air Inter withdrew from the London–Nice service following the introduction of a service by easyJet, and easyJet is now the second largest carrier on this route after British Airways[49].

[47] It is important to note that these figures are meant to be no more than broadly representative of the comparative cost structure for two different types of carrier and should therefore be viewed as no more than indicative

[48] Source: easyJet airline co. ltd, in-flight magazine, February/April 1997

[49] Source: KPMG airline interview programme

Contrary to widely-held opinion, low-cost operators are in some cases focusing on the business traveller to achieve growth in their markets by increasing daily frequencies. In addition, low-cost carriers see the importance of creating new markets amongst people who have historically not travelled before or who travelled less frequently as crucial to creating sustainable demand.

The strength of the competitor response (particularly on price) suggests that operators across a number of other modes, particularly air and coach, are concerned that they are losing markets to low-cost air carriers. In the medium term, it is likely that a combination of developing and maintaining new markets as well as winning demand from other operators will be important to the success of these relatively new carriers.

In the terms of the future, whether these carriers are able to remain viable as labour and aircraft costs rise with the upturn in the sector is by no means certain, but neither is the future of the larger carriers that are unable to reduce their own costs in the face of decreasing real income per passenger kilometre for the foreseeable future.

3.2.2.6 *Operational Characteristics*

Airline ticketing is standardised on a world-wide basis with a number of computerised databases in use. In addition, flight tariffs are set by the airlines and it should be relatively straightforward to set VAT-inclusive tariffs for those flights on which VAT is chargeable. That said, there are a number of quite complex industry practices which need to be addressed.

The sophistication of the various computerised reservation systems within the airline industry enable tickets to be issued by agents anywhere in the world for any route in the world. Accordingly, it is possible for a traveller to purchase a ticket from Milan to Madrid at a travel agent's shop in New York. The ticket can be issued in the name of a carrier (for example, United Airlines – the "issuing carrier") which does not actually operate the route in question. In these circumstances, the responsibility for carrying the passenger will transfer to another operator (possibly Alitalia – the "uplifting carrier").

Where the issuing carrier is not the uplifting carrier, a financial settlement will take place between the two airlines (in the above example, United Airlines and Alitalia). However, the amount of the settlement will not always correspond with the original price of the ticket (as billed to the traveller). All airlines have entered into bilateral agreements with each other and these arrangements fix the level of remuneration in circumstances where the issuing carrier is not the uplifting carrier.

Similarly, in circumstances where a passenger purchases a through ticket for a single price but changes airlines on route, the settlement is also determined by agreement between the two airlines concerned. For example, a passenger may purchase a ticket from New York to Athens which includes a stopover in London. American Airlines could carry the passenger from New York to London where upon the passenger could change airlines to Olympic Airways for the London to Athens leg of the journey. The passenger would receive a single ticket, issued by American Airlines, for a single price. The remuneration payable to Olympic Airways will be determined by the previously agreed price payable under the bilateral agreement.

In addition, passengers may transfer from one flight to another without any adjustment in their ticket price. For example, a passenger who has bought a British Airways ticket from London to Brussels could arrange a transfer to Sabena for no additional consideration.

Although the passenger may have paid £300 (UK Sterling) to British Airways, the amount British Airways pays to Sabena in settlement can either be above or below this value and is totally dependent on the bilateral agreement between the parties.

Financial settlement of these transactions (known as "interline" transactions) is effected through the IATA clearing house system. The IATA system does not, however, store data; it merely acts as a "post box", receiving and distributing invoices issued, usually on a monthly basis, by the participating airlines. Settlement by the IATA system has historically been on a tax-exclusive basis since the clearing house procedures are not designed to cope with tax on the transactions which they process. However, it is understood that a number of airlines have unofficially agreed that charges for passenger taxes may be passed through the system.

With regard to interlining, where the passenger travels with more than one airline, the contractual position is not clear cut. Some airlines recognise the full price charge for a ticket as their revenue, offsetting the amount paid to the sub-contracting airline as a cost, whereas others recognise only the net ticketing income, after the deduction of payments to other airlines. It is not clear whether the passenger enters into a series of separate contracts with each uplifting airline or into a single contract with the issuing airline.

To date, for transit passengers and "stopovers", the airline industry has not defined clear rules. Because their tickets are generally valid for one year, it is possible passengers may stopover, within an intermediate country, for a period of days, weeks or even months before continuing their journey to their ultimate destination. However, it is understood that the airline ticketing arrangements do enable tickets sold with an entitlement to a stopover to be identified at the point of sale.

3.2.3 ***Rail***

3.2.3.1 *Ownership*

The national railways can generally be thought of as being nationalised, state regulated and subject to considerable public service obligations. In addition they are somewhat dependent on public subsidy both for infrastructure investment and to help meet the costs of service provision. The major exception to this is the UK where the British Rail train services have recently been privatised and are now run by 25 train operating companies (TOCs). In addition there are a small amount of privately owned railways in Germany, Italy and Switzerland which mainly cover mountain regions.

In general, the national transport market structure has not encouraged competition between operators, neither has it, in some cases, between modes of transport. For example, in France, Germany and a number of the Scandinavian countries the scheduled coach market is virtually non-existent. Where it does exist (in these states) it tends to be tightly regulated by local and/or central governments, and in some cases operators are wholly owned subsidiaries of the railway companies.

3.2.3.2 *Regulation*

With respect to the regulatory environment for rail at the EU level, the Commission has been keen to ensure a fairer balance between the public and loss-making railways and other modes of transport, primarily by harmonising rules covering the competition for resources between the different modes. For the railways, this has taken the form of a

move towards greater transparency with respect to the allocation of resources for capital investment projects (such as track, signalling and new rolling stock) as well as operating subsidy. According to an EU directive, railways have been obliged since June 1997 to set up two structures which separate management of the railway infrastructure from service provision. This was designed to improve the efficiency of state railways, encourage greater accounting transparency and to facilitate cross-border supply.

3.2.3.3 *Operational Characteristics*

In the European rail industry, travellers may purchase single tickets, for a single price, which enable them to travel across a number of EU Member States (either on a single locomotive or on a series of different carriers).

European railway operators redistribute ticketing revenues by use of a sophisticated clearing house system known as COTIF. This system repatriates ticketing income according to the distance travelled (in kilometres) within each Member State. Because the railway track is a fixed feature, the measurement of distance is precise.

For interlining, the contractual position between the operator issuing the ticket, intermediate operator and traveller is clear. For example, for a rail journey from Brussels to Frankfurt, the passenger buys a ticket from Belgian Railways in Brussels and travels on a Belgian Railways locomotive for the whole of his journey to Frankfurt. However, the passenger legally contracts with Belgian Railways for that part of his journey up to the German border and with German Railways thereafter.

Settlement between the Belgian and German Railways, for the German leg of the trip, is made via the COTIF system and revenues are apportioned according to the distance travelled in each Member State.

All European rail operators are members of the COTIF system (with the exception of Eurostar). Accordingly, ticketing revenue earned by non-EU operators for intra-EU travel (for example, a ticket issued by the Hungarian railway authorities (for an Amsterdam to Vienna leg of a through journey from Amsterdam to Budapest) would be capable of being audited independently).

Finally, within the EU railway industry, transit passengers and stopovers is not thought to be a significant issue; nonetheless, the issue does arise (the terms of the ticket usually entitle the traveller to stopover at each stop on the journey - as set out on the ticket) and will need to be recognised within the framework of any revised taxation system.

3.2.4 ***Urban public transport***

Many of the service operators of public transport are still in public ownership, but this trend is changing as governments look to reduce the level of operating subsidy provided to operators and introduce “competition around the table” where operators compete on the basis of cost and/or quality before they win a franchised service. The exception is the UK coach market which has already experienced wide deregulation following the 1980 Transport Act and in small German towns where many privately owned operators are prevalent.

3.2.5 ***Coach***

Among the larger operators in the EU coach market are De Jong Intratours in the Netherlands, ASLA and Iberbus in Spain, GTI in France, Deutsche Touring in Germany and National Express in the UK. With respect to international coach services, Eurolines, a separate company operated by National Express, is the key operator. It has a major network of services in most European countries. Service providers come from all over EU and non-EU countries.

Eurolines acts as marketing, timetabling and ticketing organisation for operators providing services on a franchised basis. Eurolines does not operate coach services itself. In some cases, the operators are themselves still owned by nationalised railway businesses. For example Eurolines France services are one third owned by SNCF. Eurolines has typically between one and three service providers in each EU (or indeed non-EU, i.e. Eastern European) state that it serves. Eurolines' target is to secure one operator per country of operation.

3.2.5.1 *Structure*

In the context of the intra-EU coach market, there is considerable variation in the use of coach services across the Member States. Scheduled and shuttle coach services tend to be used by the young, low income groups and in some instances migrant workers[50]. For the first market, single trips of up to and around 500 to 700 km normally represent the limit of how far people are prepared to travel by coach, in preference to other modes (depending on price) or, indeed, in preference to not travelling at all. Typical city paired trips include Amsterdam–London, Brussels–Munich, Paris–Brussels, Frankfurt–Amsterdam, and Copenhagen–Gothenburg.

For migrant workers, trips are in many cases longer, and will typically be made on a less frequent basis (2 to 3 times a year depending on the time and distance involved). They are more likely to be from southern to northern European states, with some important flows also from eastern into central Europe. Examples of typical flows include Hamburg–Lisbon or Faro, Amsterdam–Barcelona, Bucharest–Munich, Tallinn–Hannover and Zagreb–Frankfurt.

Another market segment developing is coach (particularly scheduled) to airport services. With the emergence of cheaper scheduled airline operations from cities such as Brussels and Amsterdam, a new phenomenon of "coach-hubbing" – much of it intra-EU – is emerging, catering for members of those price-sensitive market segments who are making leisure trips abroad. Passengers are travelling by coach (often considerable distances) in order to take advantage of cheaper air travel, departing from an EU state other than their own[51].

Paradoxically, this suggests that low-cost air travel and coach operations might actually *complement* each other, rather than operating in direct competition, in some EU markets – depending on the origin and destination points of the services being offered. Estimates of the volume of coach-hubbing are not known, but clearly this is a market which might develop further if significant price differentials exist in the cost of travel from EU airports and the intra-EU coach market is able to expand.

[50] Eurolines, Amsterdam, February 1997.

[51] Eurolines, Amsterdam, February 1997.

3.2.5.2 *Operational characteristics*

At present, there is no standard ticketing system operated by the industry; typically, independent travel agents do not issue tickets, merely vouchers which are exchangeable for tickets at the point of departure of the transport. However, tickets could be sold in other Member States (for example, Holland) for journeys which originate in a second Member State (for example, Belgium). However, in these circumstances, the place of departure of the journey will always be shown on the face of the ticket.

The vast majority of coach and bus transport within the EU represent domestic journeys within a single Member State. For cross-border journeys, there are revenue sharing agreements in place between the EU-based operators. These arrangements mean that operators sell tickets only in their home Member States; if the ticket is for a return journey and the return leg is performed by an operator based in another Member State, there is a financial settlement between the two operators.

With regard to interlining, co-operative agreements and joint ventures between coach and bus operators are becoming increasingly commonplace within the EU. A ticket for a journey across the EU would typically be sold, as principal, by the coach operator residing in the Member State of first departure (which, usually, is the country in which the ticket is sold). However, as indicated above the return journey would usually be performed by a coach operator in the country of destination for the outbound trip.

EU deregulation of coach and bus services has led to an increased incidence of non-EU operators offering services within the EU (particularly operators based in Poland, Hungary and the Czech Republic). Although these non-EU operators do not employ independent travel agents within the EU, they generate income from ticket sales through other sources (most notably ex-patriate organisations). While single journeys from a non-EU place of departure to a destination inside the EU is currently treated as an international journey, future deregulation will mean that non-EU operators will be able to offer services which pick up and set down in EU Member States. Given the absence of a central clearing house system and a formalised agency agreement between non-EU operators and EU-based independent travel agents, distortions of competition could arise if the non-EU operators are not brought within the scope of EU VAT.

Finally, transit passengers and "stopovers" is not thought to be a significant issue within the EU bus and coach industry.

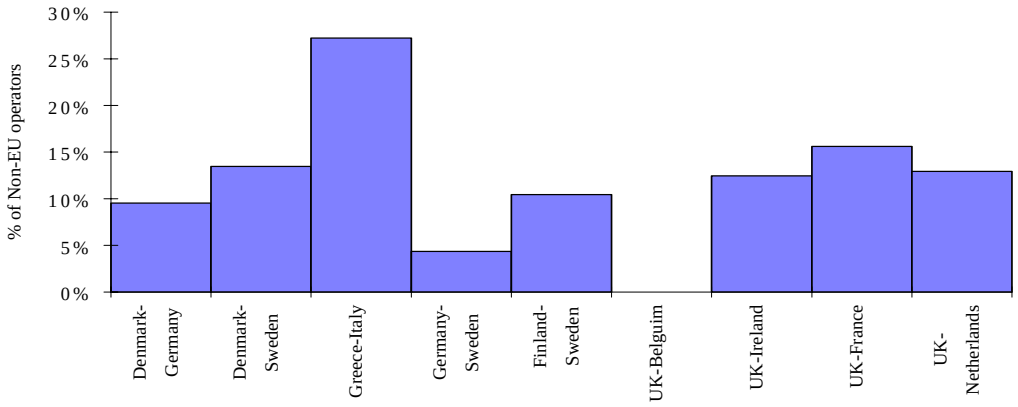
3.2.6 ***Sea***

3.2.6.1 *Ownership*

A significant proportion of traffic in the sea market is undertaken by non-EU operators. This may take the form of a Norwegian operator servicing the Swedish-Denmark route or more commonly an EU operator using a "flag of convenience" (FOC).

The extent to which a FOC is used on the major intra-EU routes is summarised in Figure 3.1. It shows considerable variations in their use, reflecting the different tax rates and safety requirements in operation throughout Europe. For example, in the Greece to Italy corridor 28% of passenger trips are with FOC operators, a direct result of strict regulation of a vessel's age by the Greek authorities, and a means of reducing crew costs.

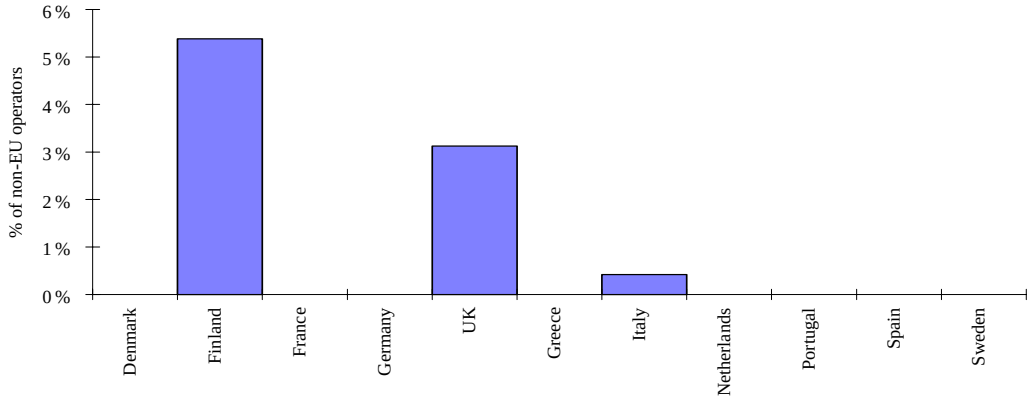
Figure 3.1: Passengers on non EU or FOC operators, by International route, 1994



Source: ShipPax database 1994/95

With respect to the domestic market, the level of non-EU and FOC operators, shown in Figure 3.2, is much lower. UK and Finland are the only countries with any significant amount, and in the Finland case this is due to Norwegian-based companies operating in the market.

Figure 3.2: Passengers on non-EU or FOC operators, by domestic route, 1994



Source: ShipPax database 1994/95

3.2.6.2 *Operational Characteristics*

The EU shipping and ferry industry does not operate standardised ticketing and reservation systems. Each operator has its own arrangements which may need upgrading if changes to the VAT treatment of the operator's services are introduced.

The industry does not operate a centralised clearing house. The industry, as a whole, is far less integrated than the airline industry and route sharing arrangements are not commonplace.

Tickets enable a customer to "stopover" during the course of a particular journey for up to three nights in an intermediate destination. For example, for a journey from Dublin, Ireland to Hamburg, Germany, the passenger may legitimately break his journey in Zeebrugge, Belgium, for up to three nights. These arrangements are not dissimilar to the stopover arrangements which apply within the airline industry.

3.3 Segmentation of the passenger transport market

In considering competition between modes in the passenger transport market, it is necessary to draw the distinction between markets where competition takes place, and markets where competition is feasible, but does not exist. Clearly competition will only take place where transport services are reasonably close substitutes for each other. In order to identify where substitution between alternative modes (and therefore competition) is feasible, it is necessary to consider transport services at some level below the aggregate national or international market[52]. For any given market, it is necessary to consider:

- the characteristics of individual modes (e.g. price, speed, comfort etc); and
- whether the necessary infrastructure is in place to permit competition (e.g. airports, rail lines).

The total cost of travel by each mode will determine which mode of is chosen by the consumer. These costs consists of both monetary (the price of the trip) and non-monetary components. The most important non-monetary component is time (i.e. waiting for a service to arrive, time spent in traffic queues, time spent walking between different mechanised modes and time spent travelling by a given mode).

For any given journey, the consumer arbitrates between the extra monetary cost of the trip and the time saved. By trading off this price and time, consumers tend to opt for the transport mode which minimises these costs. The concept of generalised cost is used in economic theory to explain this choice. This is calculated by assigning a monetary cost (value of time) to the time components of a particularly journey. The theory states that the consumer chooses the mode with the lowest generalised cost.

Thus, the two most important factors determining both the demand for passenger transport and inter-modal competition and the choice of mode for any given journey are:

- the price of that trip; and
- the time costs involved.

The above discussion therefore, points to a disaggregation that makes a distinction between:

- different groups of passengers based on their demand characteristics; and
- the length of the journey, since this will be the most important factor in determining the time costs of a given journey.

This is a standard segmentation which has been used extensively in transport studies[53] and takes into account the advantages and disadvantages of the alternative modes of transport. The proposed disaggregation therefore makes a split between those passengers

[52] Defining the relevant market is also important – the focus is on the passenger transport market where there can be competition by operators between modes (inter-modal). For a practical application of the concept of the relevant market see the Commission Decision of 21/9/94 (DG IV, 34.600) on competition between air and overnight rail services in the Paris-Madrid route.

[53] See, for example, references in "Common position on changes envisaged by the European Commission in respect of VAT regulation applicable to passenger transport", CER, 1996.

who travel for reasons of business, and those who travel for other non-business reasons (also called the leisure segment). In terms of distance, a distinction is made between short journeys, up to 300 km, medium journeys, 300–1,000 km and long journeys of more than 1,000 km. The characteristics of business and non-business passengers and the characteristics of different length journeys are discussed below.

3.3.1 *Characteristics of the business and non-business markets*

Sensitivity to price tends to be less in the business segment of the market, whilst sensitivity to time tends to be less in the non-business segment. Furthermore, business travellers put more weight on factors such as comfort, while non-business travellers are more likely to balance these factors against the price of the journey. Table 3.4 summarises, in general, the importance of these various factors to business and non-business travellers.

Table 3.4: Business and non-business travellers – weights attached to modal choice factors

Modal choice factor	Business travellers	Non-business travellers
Price	Low	High
Time	High	Low
Punctuality	High	Moderate
Frequency of service	High	Moderate
Comfort/On-board service	High	Moderate
Ability to work	Moderate	Low
Accessibility of departure/ arrival point	Moderate to low	Low

Source: S Cole, Applied Transport Economics

The table suggests that the most important difference between the two customer markets is the weight attached to time and price for any given journey, with business passengers placing a higher weight on considerations of time (subject to the ability to be productive on work related matters during a particular journey) and the non-business passengers placing more weight on price[54].

In some cases, certain modes will be competitive in both the business and non-business market segments because they offer time savings and are low cost. Walking and cycling will both be highly competitive at extremely short distances and the car will be able to offer considerable time savings and low marginal cost for longer distances.

In addition to price and time, quality of service indicators such as comfort, punctuality, frequency of service, ease of access, ability to work, on-board services etc will also be important[55] in determining choice of transport mode.

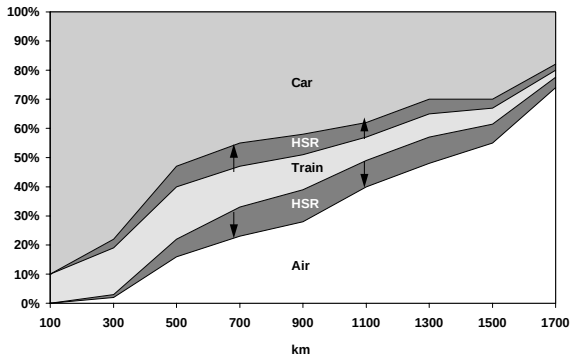
[54] Detailed assessment of the way in which demand by business and non-business customers reacts to changes in price is provided in later chapters. A further distinction between non-business holiday and non-business other (e.g. visiting friends and relatives) is made in some studies to reflect the greater price sensitivity of holiday relative to other. There are however no consistent estimates of the relative significance of the two groups across Europe and the study therefore treats non-business as a single group.

[55] See S. Cole, "Applied transport economics" and the factors identified by passengers travelling on the Madrid–Seville route as presented in COST 318, Interaction between high speed and air passenger transport, page 40.

3.3.2 *Characteristics of journeys by length of trip*

While splitting the market into business and non-business sectors is necessary to understand the dynamics of demand for passenger transport, *competition between modes* varies according to the distance travelled, as the *competitive strength of a mode* will also vary according to the distance travelled. This is illustrated in Figure 3.3. Coach is included as part of car travel but is less than 5% of its market[56] and sea travel, which in most cases will be a complementary mode rather than a substitute is excluded.

Figure 3.3: Market shares of transport modes by distance



The chart shows how the market shares of the private car, train (including HSR) and air vary as the distance involved in a journey increases. This variation can be explained by reference to the key characteristics of the three modes i.e. price, speed, comfort and flexibility.

Source: Reproduced from High Level Group, "The European High Speed Train Network" February 1995, High Speed Europe, page 23

The very short-distance market, up to 100 km

Over this distance, as illustrated in Figure 3.4, the car dominates the market, because of its flexibility, and low marginal cost, with the major competitor being the classic train and the coach.

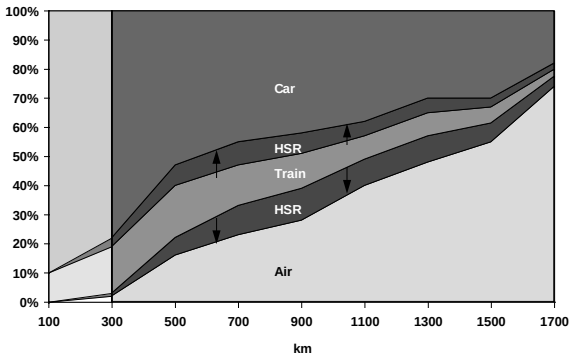
The exception to this are urban journeys, typically under 15–20 km where the private car will face more competition from modes such as the bus, tram, metro and taxi. In the urban market the advantages which stem from the flexibility of the car may be outweighed by considerations such as congestion and parking restrictions.

Short-distance journeys of 100 to 300 km

Figure 3.4 highlights the short-distance market.

[56] Market figures by distance for coach travel is not available.

Figure 3.4: Market shares of transport modes by distance, 100–300 km



At distances of around 100 km, it is clear that the private car is dominant, accounting for around 90% of all trips, with classic rail accounting for the remaining 10%. As the distance travelled increases, up to around 300 km, the car begins to lose its share to rail (of all types).

The major reasons for the dominance of the car over this range of distances are:

- its flexibility, as it offers an "anytime, anywhere" service; and
- its advantage of being able to be used at the destination of any trip.

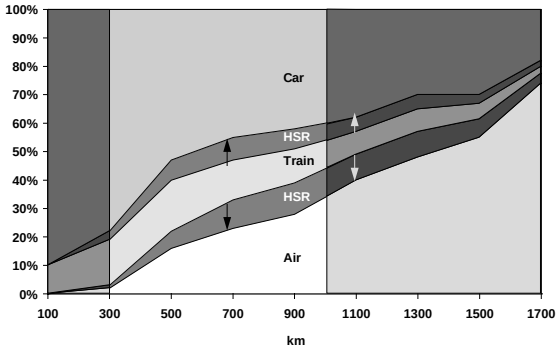
These factors will often compensate for the slightly longer journey time, particularly for non-business passengers who put a lower weight on time considerations.

In addition, much of the costs of car driving are incurred up-front, in the form of the purchase, insurance and servicing costs. Car drivers often think only in terms of the direct variable costs of a journey (or the fuel costs). This can make driving appear a relatively cheap option compared to other forms of purchased passenger transport, where the fares will reflect a fuller range of fixed operational costs.

Medium-distance journeys of 300–1,000 km

Figure 3.5 illustrates the market shares of different modes over medium-distance journeys of 300–1,000 km.

Figure 3.5: Market shares of transport modes by distance, 300–1,000 km



As the journey distance increases above 300 km, the car loses share more rapidly to both rail and air travel. By the time the journey distance is 500 km, the car accounts for only a little more than 50% of all trips, with rail taking around a 25–30% share and air accounting for the remainder.

Between 500 and 1,000 km, the air sector gains market share most quickly, while the market share of rail remains fairly constant. At distances of around 1,000 km, the market share of the car has fallen to around 40 %, while the train and air each take around 30%.

In this medium-distance market, HSR becomes a significant player, with its market share reaching around 20% between distances of 500–900 km. While more expensive than classic rail, HSR has a much faster average speed and continues to offer the convenience of city centre to city centre services. Over these distances, the chart shows that it absorbs market share almost equally from both air and the private car.

As the distance travelled increases, the ability of air to sustain its much greater average speed begins to pay off in the form of considerable time advantages. At distances of 500 km or more, these time savings begin to outweigh the higher prices of air travel and the lack of city centre to city centre services.

Information from case studies on some selected European routes, summarised in Table 3.5, illustrates the above points. Note that even in the case of long journeys above 1,000 km, as indicated in Figure 3.3, the car maintains a significant market share. Furthermore, in addition to distance, the less significant the leisure segment the lower, in relative terms, the share of the car (and rail) over longer distances.

Table 3.5: Market shares by mode, selected routes†

			Market Share			
Route	**Distance (km)**	**Leisure share**	**Car**	**Air**	**Rail**	**Coach**
Frankfurt–Dusseldorf *	230	74%	87%	1%	10%	1%
Frankfurt–Munich *	400	56%	34%	31%	35%	n/a
London–Brussels+	528	57%	16%	46%	33%	5%
Paris–Madrid^	1310	78%	16%	53%	31%	n/a

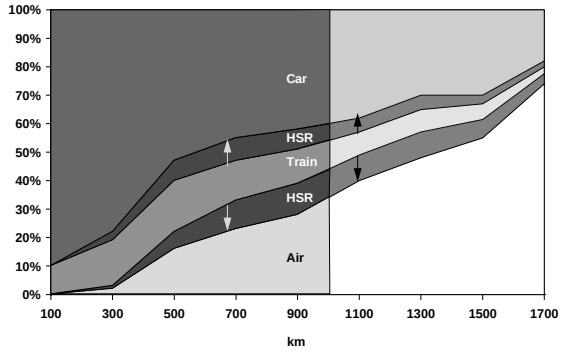
*Source: * Mercer (1995), ^ Bossard (1995), + KPMG case study (1996)*

†Note: sea travel would be included in the car/rail/coach figures

Long journeys of 1,000 km or more

Figure 3.6 illustrates the market shares of different modes over long-distance journeys of more than 1,000 km.

Figure 3.6: Market shares of transport modes by distance, > 1,000 km



For journeys over 1,000 km, air gains market share rapidly and the importance of rail (both classic and high speed) begins to diminish rapidly. Once distances of 1500 km or more are involved the air sector accounts for 60–75% of the market with the car accounting for the majority of the remainder and still maintaining a 20% share at distances of 1700km or more.

Air dominates over such long distances, where the advantage of its much higher average speed can be fully realised. Over such distances, the likelihood of encountering geographical barriers (e.g. sea crossings) which make air the most convenient form of transport, is also much higher.

3.3.3 *Characteristics by transport modes*

Table 3.6 illustrates a summary of the information provided in terms of which competing modes of transport have advantages in particular sub-sectors defined by:

- distance; and
- type of travel (business, non-business).

Table 3.6: Competition between transport modes, by market

	Main competing modes	
Distance	**Business**	**Non-business**
Urban	Car, taxi, bus, metro, tram	Car, taxi, bus, metro, tram
Short non-urban (50–300 km)	Car, classic train	Car, classic train, coach
Medium (300–1,000 km)	Car, plane, HSR	Car, plane, HSR, classic train, overnight train, coach
Long	Plane	Plane, car

Source: Buchanan and Partners, "Optimising Rail Air Intermodality in Europe" European Commission 1995, KPMG analysis

3.4 The size of the passenger transport segments

In this section, rough estimates of the size of the market segments identified above, in both volume and value terms, are provided. Table 3.7 provides the estimates of the size of the segments in volume terms and Table 3.10 gives estimates in value terms. In both cases the figures exclude trips by car[57]. More detail on the methodology used to calculate these figures is provided in Appendix 2.

3.4.1 *The market in volume terms*

Table 3.7: Estimates of the urban, short, medium and long-distance passenger transport markets in 1994

	Passenger trips (millions)	**Market share % (excluding urban and non-urban domestic trips)**
Urban (approx. < 50 km)	**26,100**	
Short-distance (approx. 50–300 km) – **intra EU**	**27**	**10%**
Medium-distance (approx. 300–1,000 km) – **intra EU**	**55**	**21%**
Long-distance (approx. >1,000 km)	**179**	**69%**
of which **intra-EU**	*76*	*29%*
of which **leisure**	*68*	*26%*
non-leisure	*8*	*3%*
third-country	103	*40%*
Non-urban domestic trips	**4,840**	
Total passenger trips	**31,200**	**100%**

Source: IATA, AEA, Eurolines, KPMG analysis

Note: "Total passenger trips" is the total by air, rail and public transport (including coach) and is derived from figures in Chapter 2.

The urban and long-distance markets

The above table makes clear the dominance of short urban journeys in the overall EU passenger transport market. In fact, the figures above suggest that over 80% of all journeys are short urban trips. Even the long-distance market which includes trips between the EU and the rest of the world is swamped by the size of the urban market.

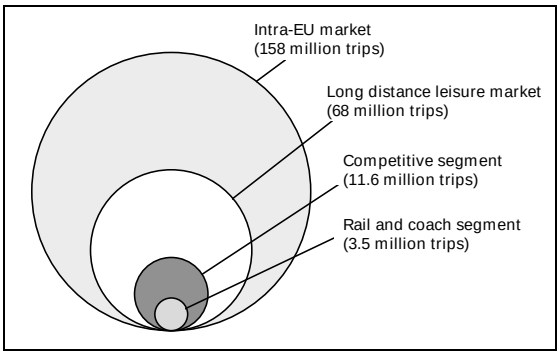
However, estimates suggest that a high proportion of the intra-EU long-distance market is accounted for by the non-business sector. The dominance of leisure in this sector, accounting for 68 million passenger trips, reflects the estimated size of the long-distance charter market and an assumption that all charter air traffic is undertaken for leisure

[57]The accuracy of any estimates of the size of the passenger transport segments is determined primarily by data availability; there is very little data on average journey length by mode, on the business/non-business split, on medium and long-distance coach travel or on the origin–destination split for chartered airlines. As already indicated there is also very little consistent data on the value of passenger transport markets. The estimates provided therefore should be considered rough approximations rather than accurate statements.

purposes. A similar assumption is made with respect to coach traffic though the absolute number of trips in this sector is small relative to air.

In terms of the competition, the size of the competitive segment in the intra-EU long-distance leisure market is estimated at around 11½ million passenger trips which consists of 3½ million rail and coach trips, and 8 million air trips. The calculation of these figures is described in Appendix 2 and is determined by making general assumptions about routes, socio-economic groups and types of leisure passengers which are most open to competition. Figure 3.7 gives an illustration of the significance of this competitive segment with respect to the long-distance leisure market and the market as a whole.

Figure 3.7: The competitive segment in the long-distance leisure market



The medium-distance segment

The medium-distance market is the smallest market according to the figures above. However, it must be remembered that in this case, all domestic journeys are excluded. While it is not possible to distinguish domestic journeys by distance, Table 3.7 shows that the number of domestic trips is many times larger than intra-EU or international journeys.

The HSR sub-segment

The earlier analysis has shown that an important and growing sub-sector in terms of competition between modes within the medium-distance sector is the HSR sector, i.e. those routes where HSR and air compete. As has already been seen in Chapter 2, the existing HSR infrastructure in Europe is limited and heavily concentrated in France. Also, the majority of available trips by HSR are domestic. In 1994, only four international trips were available, of which only two were intra-EU:

- London–Brussels;
- London–Paris;
- Paris–Geneva; and
- Paris–Berne.

Since 1994, the number of routes has enlarged slightly to include:

- Paris–Brussels; and
- Paris–Grenoble.

Table 3.8 gives an illustration of the importance of the HSR segment in the current intra-EU medium-distance market and an estimate of its potential in 2005. The HSR segment is defined as the total number of classic rail and HSR trips over the routes (current and potential) where HSR infrastructure exists. It therefore provides an estimate of the size of the market in which competition between rail and air can potentially take place. The detailed methodology used to produce these estimates is described in Appendix 2.

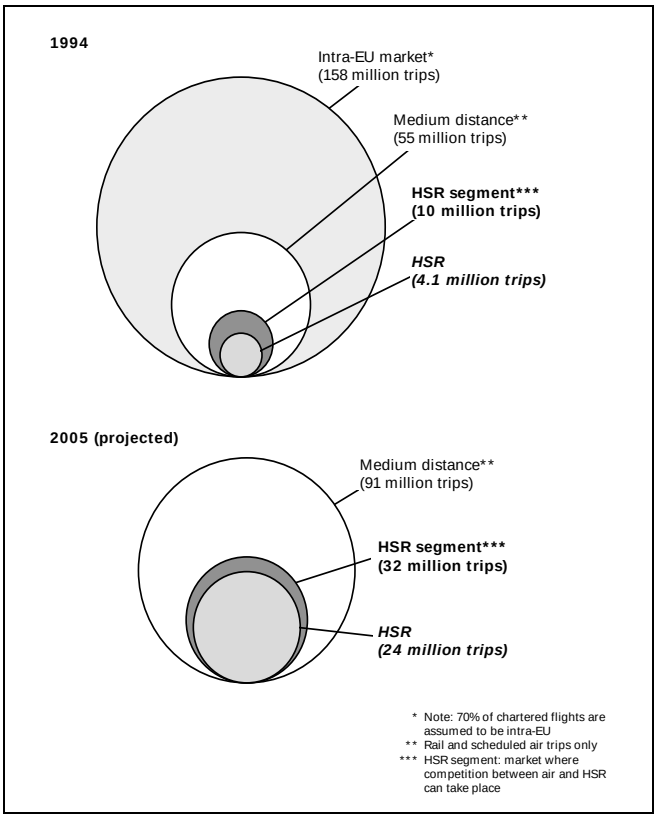
Table 3.8: The significance of HSR in the intra-EU medium-distance market

	Total no. of intra-EU trips, medium-distance (millions)	**Size of HSR segment (HSR and air) (millions)**	**Share of HSR in HSR segment (%)**
1994	55	10	40%
2005	91	32	74%

Source: IATA, KPMG calculations

Figure 3.8 provides an illustration of the relative significance of the HSR segment, currently and in the future.

Figure 3.8: The intra-EU transport market – the competitive HSR segment



The figure shows that not only will the HSR segment grow faster than the overall intra-EU market at this distance, but the importance of HSR within the HSR segment is likely

to grow significantly as the infrastructure expands under the TENS programme. The figures must be regarded as illustrative projections rather than accurate forecasts. Nevertheless, they serve to demonstrate the potential of the HSR segment in the future EU passenger transport market and suggest that competition between air and HSR services is likely to intensify in the future.

The above estimates, in terms of the size of the passenger market where competition exists, represent a "floor" as competition can also take place between conventional rail and air. For example overnight services by conventional rail will be a possible substitute for air, due to the high level of comfort provided and timetables especially suited to the business segment. Overnight services have a much larger route network than HSR, mainly medium-distance, and therefore in principle will compete with a larger proportion of air transport. However, the level of competition or substitution from air to overnight rail is likely to be very low.

Table 3.9 presents a comparison of the size of the overnight rail market which competes directly with the air market; the calculations involved in this are described in Appendix 2. In summary, the size of the competitive market between air and overnight rail is quite small, estimated to be around 1.5 million passengers. This consists of 1.3 million air and 0.2 million rail passengers and represents around 2.8% of the total medium-distance market.

Table 3.9: The significance of overnight rail in the intra-EU medium-distance market

	Air	**Rail**	**Coach**	**Total**
Total no. of intra-EU trips, medium-distance (millions)	40.8	12.9	1.2	54.8
Size of competitive segment (rail and air) (millions)	1.3	0.2	0.0	1.5
Share of Market (%)	3.2%	1.6%	0.0%	2.8%

Source: KPMG calculations

3.4.2 *The market in value terms*

As has been noted above, reliable information on the value of the passenger transport market is extremely rare, and it has been necessary to make a number of assumptions in order to provide even approximations of the value of the competitive market segments. Essentially, such information as is available on the revenue per passenger-kilometre generated by the different transport modes has been used, and assumptions about the average length of trip in each market segment have been made. Together with the trip volumes given in Table 3.7, this information (and the assumptions) allows estimates of the value of the markets to be derived. More detail on the assumptions used is presented in Appendix 2.

Table 3.10: Value estimates of the urban, short, medium and long-distance passenger transport markets in 1994

	Gross turnover (ECU millions)	Market share %	Market share % (excluding urban and non-urban domestic trips)
Urban (approx. < 50 km)	**45,000**	**20%**	
Short-distance – **intra EU**	**1,900**	**1%**	**2%**
Medium-distance – **intra EU**	**10,200**	**4%**	**12%**
of which HSR segment	*2,000*	*1%*	*2%*
Long-distance (approx. >1,000 km)	**76,000**	**33%**	**86%**
of which **intra-EU**	*28,600*	*12%*	*32%*
of which **leisure**	*25,300*	*11%*	*29%*
non-leisure	*3,300*	*1%*	*4%*
third-country	*47,400*	*21%*	*54%*
Non-urban domestic trips	**98,100**	**42%**	
Total gross turnover	**231,200**	**100%**	**100%**

Source: Intraplan, LT Marketing, Eurolines, KPMG analysis

The estimates presented in Table 3.7 suggest that the total value of the EU passenger transport market is around ECU 231 billion. This is close to the ECU 212 billion given in Panorama of EU Industry 1997 and consistent with other studies which analyse sub-sections of the EU transport market[58], but it should be stressed that these estimates are sensitive to the assumptions used. While it has been possible to obtain information on revenue per kilometre by alternative modes, it has been necessary to make some fairly strong assumptions about the average distances travelled and the variation, or lack of it, in the revenue per passenger-kilometre figures across the different market segments identified in the table. These estimates by segment should therefore be treated as broad approximations.

Once the analysis is expressed in terms of the value of the market segments as opposed to the volume, the dominance of the urban and non-urban domestic market segments is reduced significantly with the long-distance intra-EU market being almost of an equivalent size.

Table 3.10 also suggests that the long-distance leisure market becomes much more significant when measured in value rather than volume terms. This is a potentially significant result, as it is in this market that the demand sensitivity to price changes as a result of a change in the VAT regime is likely to be at its greatest.

In terms of medium-distance trips, the size of market when measured in value terms is now more than five times as large as the short-distance market compared to a ratio of 2:1 when the markets are measured in volume terms. The highly competitive HSR segment also takes a similar share of the medium-distance in both value and volume terms – approximately 20% in each case.

[58] Considering sub-sections of the EU transport market; Pan-European transport give a combined turnover of ECU 72 billion for the top 10 European transport companies and OECD state 1992 travel account expenditure (in 1994 prices) for six of the EU15 (Germany, UK, Italy, France, Netherlands and Austria) as ECU 92 billion.

3.5 **Conclusions**

The European passenger transport industry is experiencing continuing change in its regulatory, environmental and financial circumstances. Governments are increasingly looking to reduce subsidies to all sectors and to privatise enterprises where this is politically viable. In the air transport market, increased market concentration caused by the merging of large carriers and their taking over smaller operators is likely to continue.

However, as the market grows new entrants are likely to continue to be attracted to it even though they might not be active for long. This has very much been the US experience since deregulation in the late 70s and early 80s took place there. In addition, the advent of low-cost scheduled operators coupled with the latest round of de-regulation in the EU is likely to further increase competitive pressure on incumbent carriers.

In general terms, the EU passenger transport market remains dominated by EU-based operators. Even in the most deregulated rail markets of the EU such as the UK, new entrants tend to be of EU origin. For example, under the UK rail franchising programme, a number of services have been sold to French-led consortia. In the bus/coach market, UK bus and coach operators are now active in the Portuguese, Swedish, Dutch, French and Belgian transport markets. However, the existence of non-EU based operators in the rail and bus/coach sectors tends to be extremely limited[59]. This is not the case for the sea market, where a significant number of non-EU or FOC operators exist. About 14% of passengers in the intra-EU sea market use non-EU based operators, with the largest presence felt on the Greece to Italy corridor.

In recognition of the fact that the aggregate EU passenger transport market is not homogenous, the preceding analysis proposed a segmentation of the market into four sub-markets. The analysis suggested that:

- in the urban market, the car, taxi, bus, tram and metro are all in competition with each other;
- in the short-distance, non-urban market, the car competes primarily with the coach and the train;
- in the medium-distance market, the competing modes are the car, HSR, air and (particularly for the leisure segment) the coach; and
- in the long-distance market, the car competes with air and rail (and, to a lesser extent, coach).

The short-distance market (including urban trips) is by far the most significant in terms of number of trips. Both the short and long-distance markets are, however, dominated in terms of market share by the car and air respectively. The key segment where competition between modes is (and could be) strongest is therefore the medium-distance segment, especially for competition between HSR and air. At present the capacity for such competition is limited by the physical infrastructure of the HSR network. However, as has been discussed above, the HSR infrastructure is likely to grow rapidly in the next decade or so and the scope for competition will rise correspondingly. Other markets where competition between modes is strong, but to a lesser degree, is in the long-distance

[59] In the coach market, there is some evidence of Eastern European operators beginning to penetrate the market. However, at present, this is thought to be on a limited scale.

leisure market between air, rail and coach travel and between air and overnight rail in the medium-distance business segment.

In terms of the size of each of these sectors, the HSR segment, defined as the market where competition between air and HSR can take place, is currently estimated to be limited to 10 million trips and represents around 18% of medium-distance intra-EU trips (excluding chartered air trips); this is just over 6% of the overall intra-EU market in terms of number of trips. This is likely to increase significantly in the future, as the HSR segment expands to reach a total of around 32 million trips, representing more than 35% of medium-distance intra-EU trips according to our estimates, based on the planned future HSR routes.

For the long-distance leisure segment, the size of the competitive segment is estimated at around 11½ million passenger trips, of which the vast majority are air trips. In the overnight rail segment under ¼ million conventional rail passenger trips are open to competition from air.

As would be expected, the analysis shows that when the value of the passenger transport market and its various sub-sectors is considered, the short-distance market (including urban trips) becomes less significant with the long-distance market dominating. In terms of the competitive HSR segment the estimates presented in Table 3.6 suggest that this accounts for some ECU 2 billion in 1994, a figure which is expected to grow rapidly as the network infrastructure expands and demand volumes grow.

The research undertaken confirms that different modes of passenger transport compete at different distances. In terms of the competitive impact of different VAT treatment of different modes, as Chapter 4 will show, some Member States do identify distinct markets (distinguishing between urban and non-urban markets and between domestic and international markets) and impose different VAT rates in each.

4 The VAT System: overview and distortions

4.1 **Introduction**

Within the EU and within individual Member States, the VAT rules applicable to passenger transport differ significantly in terms of levels of taxation, coverage and application. There is concern that variations in fiscal regimes might distort the allocative efficiency of the market, harming the competitiveness of EU economies and disadvantaging domestic EU operators *vis-à-vis* other EU operators and/or non-EU operators.

This chapter presents an overview of the current VAT system together with an assessment of the economic distortions arising from the application of different rates of VAT to different modes of transport at both the domestic and international level, as well as from inconsistent enforcement of the rules by the fiscal authorities. The chapter is organised as follows:

- first, an examination of the rationale for taxation and how it is justified in the context of passenger transport services;
- second, a summary of the standard economic framework used to assess the impact of taxation. This is used to highlight:
  - the economic effects of taxation,
  - the competitive distortions arising from different VAT treatment of different modes, and
  - the way in which taxes get passed on in prices.
- third, an overview of the current VAT system, highlighting the existing discrepancies in treatment of supplies, followed by an assessment of the differences in the right to deduct input VAT;
- fourth, a quantitative assessment of the distortions arising from the current VAT system, based on the assessment of the size of the competitive passenger transport segments of the EU market provided in Chapter 3 and the existing VAT rates, together with an identification of the economic distortions arising from practical differences in the way VAT rules are implemented;
- fifth, a summary of other non-VAT related distortions in the transport market, such as regulation and environmental externalities, and their implications for the VAT induced distortions; and
- sixth, overall conclusions on the significance of the distortions of the existing VAT system.

In view of the complexity and scope of the issues addressed in this chapter, the key points addressed are highlighted within each section. In summary, the chapter sections aim to answer the following questions:

- *How is the taxation of passenger transport services justified?*
- *How does tax affect pricing and competition in the passenger transport sector? Can different modes of transport be taxed differently?*
- *What are the current VAT rules for passenger transport services performed within the EU and what is the rationale for taxing passenger transport in this manner?*
- *What distortions are created by the current VAT rules?*
- *What is the national practice with regard to the administration of the legislation? Where is national practice different from the legislative provisions and why?*
- *What examples are there of local practice differing from national legislation?*
- *Are the VAT induced distortions (created by legislative treatment and national practice) affected by other indirect taxes?*
- *What are the current rules for the deduction of VAT incurred on passenger transport services? How do these rules work in practice and what is their effect?*
- *Taking all of the above together, what are the quantifiable distortions of the current VAT system now and in the future?*

4.2 **The rationale for taxation**

How is the taxation of passenger transport services justified?

Taxation, in the form of VAT, excise duty and income tax, has in general terms the following objectives:

- first, to raise revenue to cover public expenditure using VAT mainly, but, in a way that does not contribute to market failures;
- second, to correct market failures related to externalities, using excise duty as the main instrument; and
- third, to achieve a more desirable distribution of income, from income tax predominately.

Different levels of public expenditure (as a ratio of GDP) in different EU countries, as well as differences in the composition of tax revenue in terms of direct and indirect tax can and do give rise to different levels of national VAT between countries. This is true in national passenger transport as in other sectors of the economy (section 4.3 provides a detailed assessment). One of the characteristics of passenger transport is, however, that VAT rates can vary between different modes of transport both within the same country and between countries.

The Commission's recent Green Paper *Towards Fair and Efficient Pricing* focuses on the correction of externalities (second objective above). This arises where the market outcome is considered either above the socially desirable (in which case the good is taxed) or below it (in which case the good is subsidised). The report focuses on the extent to which environmental externalities in the areas of (air pollution, noise pollution), accidents and meeting infrastructure costs can be remedied by various policy instruments, many of which are founded on price related mechanisms.

The key concern is the environmental impact of different modes of transport, particularly in the domestic market. The paper indicates that for many journeys there is a significant mismatch between prices paid by individual transport users and the costs they cause, both in structure and level. In the case of pollution, accidents and congestion it states that cost are not fully covered and differ significantly by mode. These issues are discussed in greater detail in section 4.8.

Many Member States have already used fiscal measures (such as excise duty) to correct what they consider to be market failure. Taxation is used to increase prices in order to reduce demand (see section 4.3.1) for the less environmentally friendly modes. One of the most clear examples of this process in action is in the case of motor car where a high level of fuel duty applies which reflects environmental concerns of vehicle emissions, infrastructure damage and to some extent accidents and congestion

Note, however, that in the case of passenger transport, the achievement of the second and third objectives may be conflicting in the case of the urban passenger transport market (which accounts for the vast majority of trips); the least environmentally friendly modes of transport (coach, bus) can often be the ones most used by the relatively less well-off; this issue is examined in more detail in the section on the current VAT system that follows.

In the case of international transport, different VAT treatment of different modes could be justified on similar grounds. As already indicated in Chapter 3, however, such trips form a small proportion of total trips[60], so that such arguments are unlikely to provide a credible rationale. For the same reason, arguments based on distribution of income (i.e. taxing of the mode which is used by the better off) are also difficult to sustain.[61] Two possible explanations emerge:

- first, different VAT treatment aims to correct an **existing** distortion, by taxing the mode which enjoys a competitive advantage through a subsidy or preferential treatment, or
- second, the different treatment is related to the complexity of the passenger transport market; equal positive VAT treatment of modes for international trips could put EU air operators at a disadvantage *vis-à-vis* non-EU operators and would be difficult to apply and administer.

The relative merits of these arguments are re-assessed below, after the detailed presentation and assessment of the existing VAT system.

[60] Excluding the car

[61] In fact, as will be seen below, the opposite is the case.

4.3 The economic effects of taxation [62]

How does tax affect pricing and competition in the passenger transport sector? Can different modes be taxed differently?

4.3.1 *The economic impact of taxation*

The introduction (or increase) of a tax in passenger transport will result in a positive difference between the price paid by consumers and the price received by operators. As illustrated in Figure 4.1, the introduction of a tax leads to consumers paying a higher price (F_{tax}) than they would if there was no tax ($F_{no\ tax}$); note also that in this case, where supply of travel is assumed to be horizontal[63], operators receive the same price after taxation so that the **whole** of the tax is passed on to the consumers.

This is the most likely case, but there are a number of other possible options for operators. For example, operators may modify the pricing structure by holding the leisure fare constant and raising the business fare by a disproportionate amount. This is a valid plan as the business sector is less price sensitive and in some countries VAT is a deductible expense (these issues are discussed in greater detail in section 4.8).

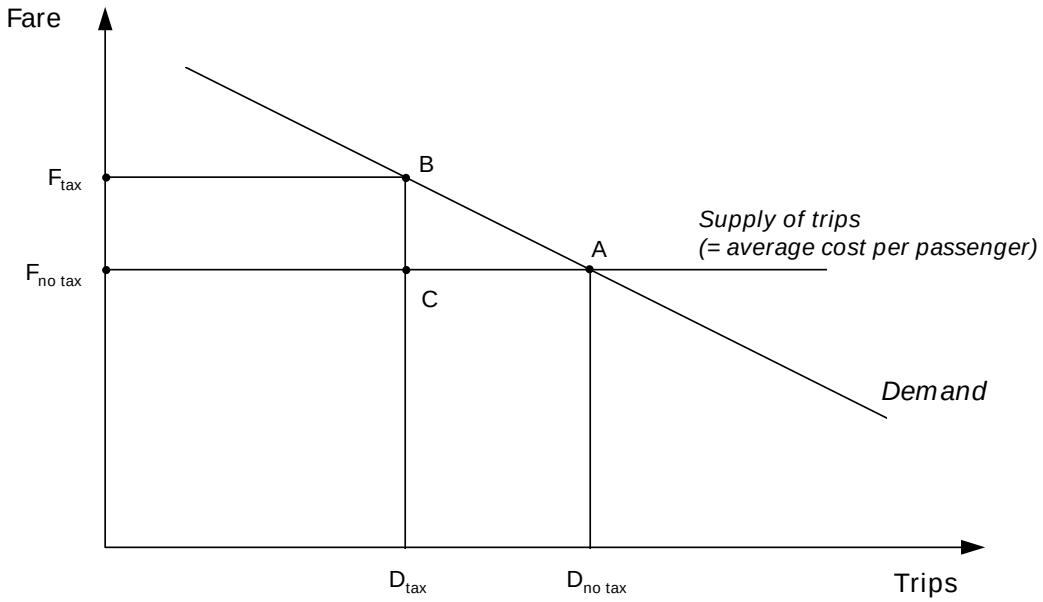
Where taxation leads to higher prices, lower demand for trips follows; the extent of the reduction depends on how sensitive demand for trips is to price; i.e. the steepness of the line showing the demand for travel. The steeper the line (i.e. the more insensitive demand to price changes) the smaller the reduction in demand for any given increase in prices; it follows that demand for business travel, which is more price insensitive (see Chapter 3), would fall by less compared to leisure travel for any given level (or increase) in VAT[64].

[62] This section uses some basic economic tools; it can be omitted without loss of generality. For a more detailed illustration see R Layard and A Walters, "Microeconomics", McGraw Hill, 1988.

[63] This means that any increase in the number of people travelling can be provided at the same cost per passenger; this is likely to be true at the margin for all passenger transport operators (i.e. rail, air and coach), although the actual level of the cost will differ between operators and routes.

[64] Under the assumption of no VAT deductibility. Clearly where VAT is deductible for business purposes, demand will in theory be unaffected by the introduction or change in the VAT rate.

Figure 4.1: The economic impact of taxation on demand for passenger transport



4.3.2 ***The implications for competition***

Consider now the impact of different tax treatment on operators who offer services in the same market. ***At the one extreme, these services are perfectly substitutable for each other; in such a case, if operators face the same cost conditions, a positive VAT rate on one operator would drive them out of business*** as they would have to charge a higher price than the other operator (see Figure 4.1). This largely explains why the VAT rates set by different national authorities for international (including intra-EU) air journeys have all been largely harmonised at zero.

Note, however, that where cost conditions are **not** the same, then the introduction of a positive VAT rate on the service of the lower cost operator could essentially ensure that both operators do face the same cost conditions. In the case of one operator (or group of operators) facing lower costs as a result of subsidy, the introduction of a positive VAT rate on the lower cost operator can restore a "level playing field". Alternatively, where all operators already face a VAT rate, the same result can be achieved by the exemption of VAT for the higher cost operator.

At the other extreme, ***the services provided by different operators will not be substitutable (e.g. an urban metro operator and a long-distance rail operator), in which case different taxation will have no impact on the competitive position of the operators***.

In practice, for a range of passenger travel segments[65] the degree of substitutability between different modes will be in between those two extremes. In such cases, an operator will be able to hold a positive market share even if its prices are higher than its competitor(s). The relative market share of the different operators will be higher:

[65] Recall that these have been identified in Chapter 3 as the short-distance urban market for competition between rail, car and bus; the medium-distance, business and leisure market for competition between air and HSR/conventional rail; and the long-distance, leisure market for competition between air, rail and coach.

- the smaller the positive price differential relative to their competitors (as shown in Figure 4.1), and
- for any given price differential, the smaller the extent of substitutability between the services offered by the competing operators.

This latter factor is captured by a parameter reflecting the sensitivity of demand for the services of one operator to changes in the price of the services offered by the competing operator (or operators).[66] Such parameters for substitution between rail and air/coach/car services have been estimated for the passenger transport sector and a relevant selection is presented in Table 4.1. The greater the elasticity, the bigger the extent of substitution between the modes. Note that all the estimates are significantly different from zero indicating that there is indeed substitutability between modes. An increase of rail prices by, say, 10% could lead to an increase in demand for air (and/or coach/car) trips of between 5% (with an elasticity of 0.5) and 15% (with an elasticity of 1.5).

Table 4.1: Estimates of cross-price elasticity

Route	**Cross-elasticity (leisure)**
Frankfurt–Munich^	**+0.5**
Frankfurt–Dusseldorf^	**+1.3**
Paris–Madrid +	**+1.5**
UK domestic : short to medium distance~	**0.8–1.2**
TGV* 3 hours	**0.5**
TGV* 5 hours	**0.8**

*Source: Mercer^, Bossard+, Leeds University~ (cross-elasticity between rail and coach), ITA**

As section 4.4 will show, some Member States do identify distinct markets (distinguishing between urban and non-urban markets and domestic and international markets), and impose different VAT rates in each. For example, air never competes with tram or urban bus services so, in principle, differential tax rates can be applied. However, the precise segmentation of the market, in a way that includes only one modal category, is difficult and differential tax rates therefore may not be feasible.

[66] The term used is "cross-price elasticity of demand".

4.4 Current VAT system: VAT rates

What are the current VAT rules for passenger transport services performed within the EU and what is the rationale for taxing passenger transport in this manner?

The current taxation system is governed by the Sixth Directive[67] and taxes passenger transport services according to the distance travelled within each Member State. The apparent rationale behind this option, the "distance option", is to allow Member States to apply a positive rate of VAT to domestic passenger transport and to domestic legs of intra-EU and international transport (ie taxation of the proportion of the journey enjoyed within the Member State itself).

The Directive fixes the minimum standard rate of VAT[68], until 31 December 1998, at 15% but also permits Member States to apply one or two reduced rates of VAT (of not less than 5%) to supplies of specific goods and services[69]. Included within this category are passenger transport services.

Member States applying reduced rates[70] lower than the minimum fixed by the Directive are permitted to continue to do so provided those lower rates were in force on 1 January 1991. This provision enables Member States to retain zero or super-reduced rates of passenger transport taxation until the end of the transitional period.

Member States may also exempt[71], without right to deduction of tax incurred at an earlier stage, passenger transport services[72].

In addition to the above, there are a number of derogations affecting Germany (specifically in the context of internal waterways transport), Greece, Spain and Portugal (specifically in the context of travel to, from and between certain islands). In particular, Portugal applies reduced rates to transactions carried out in the autonomous regions of the Azores and Madeira[73], whereas Greece is able to apply VAT rates up to 30% lower than the rates applied in mainland Greece in the departments of Lesbos, Chios, Samos, the Dodecanese and the Cyclades and on the Aegean islands of Thasos, Northern Sporades, Samothrace and Skiros[74].

The Directive envisages that, at the end of the transitional period, passenger transport shall be taxed in the country of departure for that part of the journey taking place within the EU[75].

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[67] Article 9(2)(b): EU Sixth Directive

[68] Article 12(3): EU Sixth Directive.

[69] Annex H: EU Sixth Directive.

[70] Article 28(2): EU Sixth Directive.

[71] Article 28(3): EU Sixth Directive.

[72] Paragraph 17, Annex F: EU Sixth Directive.

[73] Article 12(6): EU Sixth Directive.

[74] Article 28(2): EU Sixth Directive.

[75] Article 28(5): EU Sixth Directive.

In circumstances where an operator is not established in the Member State in which the transport service is being provided, the operators may appoint an independent fiscal representative to pay the tax due, on the operator's behalf, to the appropriate fiscal authority[76].

In 1994, an EC Commission report[77] noted that the use of the fiscal representation procedure was not uniformly applied or required across the EU (at that time, Germany, Ireland, Netherlands and the UK did not require it). The report also concluded that the procedure gave rise to increased costs for suppliers and there were also difficulties in identifying organisations prepared to be jointly and severally liable for the tax due. In this connection, the report noted that the mere fact of the use of a fiscal representative restricted a Member State's abilities to properly audit transactions since, having appointed or directed the use of a fiscal representative as being responsible for payment of the tax due, it then restricted (under domestic VAT law) the persons from whom information can be sought and verification undertaken. In conclusion, the report summarised that the use of the fiscal representation procedure should only be used as a last resort and that Member States should use the existing legal framework for mutual assistance for verification purposes.

4.4.1 ***Competitive distortions in domestic markets***

What distortions are created by the current VAT rules?

In accordance with the provisions allowed by the Sixth Directive,[78] nearly all Member States levy VAT at a reduced rate, or at a zero rate or exempt[79] passenger transport services. Table 4.2 sets out the current VAT domestic rates.

[76] Article 21: EU Sixth Directive.

[77] Com (94) 471 Final: "Common System of Value Added Tax: arrangements for taxing transactions carried out by non-established taxable persons"

[78] Annex H: EU Sixth Directive.

[79] Annex F: EU Sixth Directive.

Table 4.2: VAT Treatment of domestic passenger transport

Member State	Air %	Sea %	Inland Waterways %	Rail %	Buses/coaches %	Car fuel %
Austria	10.0	Not Applicable	10.0	10.0	10.0	20.0
Belgium	6.0	6.0	6.0	6.0	6.0	21.0
Denmark	Exempt	Exempt	Exempt	Exempt	Exempt (tourist bus services taxed at 25)[1]	25.0
Finland	6.0	6.0	6.0	6.0	6.0	22.0
France	5.5[2]	5.5[2]	5.5	5.5	5.5	20.6
Germany	15.0	7.0	15.0 (distances over 50km and non-urban services); 7.0 (distances of less than 50km and urban services) 0 for ferry transport on Rhine, Elbe, Danube, Oder and Nesse[3]	15.0 (distances over 50km and non-urban services) 7.0 (distances under 50km and urban services). [3]	15.0 (distances over 50km and non-urban services); 7.0 (distances under 50km and urban services) [3]	15.0
Greece	8.0 (travel within and between certain islands is taxed at 6.0)	8.0 (travel within and between certain islands is taxed at 6.0)	8.0	8.0	8.0	18.0
Ireland	Exempt	Exempt	Exempt	Exempt	Exempt	21.0
Italy	10.0	10.0	10.0	10.0 (exempt for urban public transport) [4]	19.0 (exempt for urban public transport)[4]	19.0
Luxembourg	3.0	Not Applicable	3.0	3.0	3.0	12.0[5]
Netherlands	6.0	6.0	6.0	6.0	6.0	17.5
Portugal	5.0 (travel to/from the Azores and Madeira is taxed at 0)	5.0 (travel to/from the Azores and Madeira is taxed at 0)	5.0	5.0	5.0	17.0
Spain	16.0 (travel between mainland and Balearic Islands is taxed at 7.0)	16.0 (travel between mainland and Balearic Islands is taxed at 7.0)	16.0	7.0	7.0	16.0
Sweden	12.0	12.0	12.0	12.0	12.0	25.0
United Kingdom	0[6]	0[6]	0[6]	0[6]	0[6]	17.5

Source: European Commission COM(02) 416 Final Commission of the European Communities, 1992: KPMG analysis

Notes

1 *Tourist bus services are not specifically defined, but exclude regular scheduled transport buses. "Bus" is defined as a road vehicle carrying nine people or more (including the driver).*

2 *Transport to and from Corsica, which is taxed at 0% insofar as it involves travel outside the French territorial area, is subject to an extra tax at FFR 40 per person, or FF 10 if the journey is less than 10km, from one part of Corsica to another.*

3 *Urban services are defined as occurring entirely within one municipality.*

4 *Urban public transport is defined as transport either entirely within the territory of one municipality, or between two municipalities which are 50km or less apart.*

5 *15% rate for leaded petrol.*

6 *Except for means of transport carrying <12 persons. Transportation in vehicles which carry fewer than 12 persons is subject to VAT at 17.5%.*

Table 4.2 indicates that in Austria, Belgium, Finland, France, Ireland, Luxembourg, the Netherlands, Portugal (with the exception of travel to Madeira) and Sweden there is no

variation in the rate of VAT levied on passenger transport services, irrespective of length of trip, mode of travel used or type of vehicle in operation.

The United Kingdom's regime is similarly harmonised across the modes, the key difference being that for all modes VAT is chargeable if vehicular capacity is for less than twelve persons. This means that transport in taxis, minibuses and some small aircraft is subject to levy VAT.

Thus, for the majority (ten) Member States of the Union, it is possible to say that they are effectively operating a harmonised domestic VAT regime for passenger transport with respect to the rates levied. Other variations, for example with respect to deductibility, do exist in certain cases and these are examined further below.

An additional cluster of Member States can be identified, which, whilst not possessing such a closely harmonised regime as for the group of ten identified above, does not generally have significant variations in the range of VAT rates levied. These states comprise Germany, Italy, Greece, Spain and Denmark. The distinctive characteristic of this group of states is that all of them (except Denmark) levy reduced VAT rates for trips in specified markets. These include urban markets (Germany, Italy) and island markets (Greece, Portugal and Spain).

This policy aims to address distribution of income objectives, as short-distance travel is a necessity linked with commuting to work, compared to longer-distance travel, linked largely to business travel and/or leisure. Table A3.1 in Appendix 3.1 provides a detailed assessment of the rationale behind the different VAT treatment of domestic transport.

In Denmark, economic concerns have led to the taxation of tourist or occasional bus services at a 25% rate[80]. This compares with wholesale exemptions for other passenger transport services within the country. The Danish approach stems from the distortion of trade caused by the difference in the country's standard-rate of VAT (25%) in comparison with the standard-rate in neighbouring Germany (15%).

Consumers choosing private car travel as an option face a VAT charge on their fuel at the full standard rate, in every Member State without exception In addition, Governments also levy high levels of other duties, which often form the largest cost component of the product. It is unlikely, therefore, that tax differentials would lead to loss of business by any public transport system in favour of cars.

[80] It was also the intention to include charter services with this tax, but this has not yet been implemented.

In summary, variations in domestic VAT rates on passenger transport are not of economic significance in so far as they do not distort the choice of demand made between modes of transport. The reason is that any variations in rates which exist are primarily between modes of transport that do not compete directly with each other. Furthermore, where variations were identified they sought to meet distributive objectives, with the exception of the treatment of the car which also sought to correct environmental externalities.

4.4.2 *Competitive distortions in intra-EU and international passenger markets*

What distortions are created by the current VAT rules?

This market effectively covers all journeys which either begin, end or pass through more than one Member State. Historically, VAT has been levied only on a pro rata basis for land-based forms of transport in some Member States, in accordance with the principle of territoriality. This means that VAT is not applied to the whole journey, but only to an imputed value given to that part of the journey taking place within the Member State in question (i.e. up to the border). Table 4.3 illustrate the relevant intra-EU and international VAT rates.

Member States can be grouped into those where there is little or no variation in rates between modes for intra-EU and international journeys and those where this is not the case.

The former group consists of:

- Finland,
- Ireland,
- Italy,
- Luxembourg,
- Netherlands
- Portugal,
- Sweden, and
- United Kingdom.

The group of countries for which variations in VAT rates exist, consists of:

- Austria,
- Belgium,
- Denmark,
- France,[81]
- Germany,
- Greece,[82] and
- Spain, although the variations are not rigorously enforced.

[81] A significant number of international rail routes are exempt from VAT – see Appendix 4.2.

[82] The geographic position of Greece implies that the positive rate levied on international journeys by coach, to the extent that it is implemented, is unlikely to effect in any substantial way, competition between coach and air (or rail).

Table 4.3: VAT treatment of intra-EU and international passenger transport[83]

Member State	Air %	Sea %	Inland Waterways %	Rail %	Buses/Coaches %
Austria	0[1]	0[2]	0 and 10.0 for trips on Lake Constance	10.0	10.0
Belgium	0[1]	0[1]	6.0	6.0	6.0
Denmark	0[1]	0[1]	Not Applicable	0[1]	0 (scheduled traffic); 25.0 (tourist bus services)[3]
Finland	Outside the scope	Outside the scope	Outside the scope	Outside the scope	Outside the scope
France	0[1]	0[1]	5.5	0 for transit services; 5.5 for other services but specific international routes are exempted[4]	0[1] for transit services[7], 5.5 for all other services
Germany	0[5]	7.0 (transport in German territorial waters is treated as taking place outside Germany)	7.0 but ferry transport on the Rhine, Danube, Elbe, Oder and Neisse is treated as taking place outside of German territory and is, therefore, taxed at 0	15.0 but 7.0 for journeys of under 50km or urban transport	15.0 but 7.0 for journeys of under 50km or urban transport
Greece	Outside the scope	Outside the scope	Not Applicable	8.0	8.0
Ireland	0[1]	0[1]	0[1]	0[1]	0[1]
Italy	0[1]	0[1]	0[1]	0[1]	0[1]
Luxembourg	0[1]	Not Applicable	0[1]	0[1]	0[1]
Netherlands	0[1]	0[1]	6.0	6.0	6.0
Portugal	0[1]	0[1]	0[1]	0[1]	0[1]
Spain	16.0[6]	16.0[6]	16.0[6]	7.0	7.0
Sweden	Outside the scope	Outside the scope	Outside the scope	Outside the scope	Outside the scope
United Kingdom	0[1]	0[1]	0[1]	0[1]	0[1]

Source: European Commission COM (92) 416 Final, Commission of the European Communities, 1992; KPMG network

Notes

1 *Zero in this table refers to "zero rated" or "exempt with credit", which are in effect identical.*

2 *Austria taxes international passenger transport by ship (whether on rivers, lakes or seas) at 0% (with the exception of journeys on Lake Constance).*

3 *Tourist bus services are not specifically defined, but exclude regular scheduled transport buses. "Bus" is defined as a road vehicle carrying nine people or more (including the driver).*

4 *The exempted rail routes are detailed in Appendix 3.2.*

5 *Germany reserves the right to tax (at 15%) the domestic legs of flights to/from countries which tax the domestic legs of flights to/from Germany. Where "reciprocal" arrangements apply, the German tax charge is waived. Routes which are taxed are those to countries other than those detailed in Appendix 3.3. Where tax is to be levied, the tax base will be the difference between the cost of a direct flight from the stopover point to the destination and a direct flight from the point of origin to the destination. For example, if a flight from Berlin to foreign city X costs DM 1,200 and a flight from Frankfurt to X costs DM1,000, the tax base for a flight Berlin-Frankfurt-X will be DM 200.*

If there is no difference between the cost of direct flights, or the difference is negative, no tax is assessed.

For journeys involving stopovers, the operator must not issue a ticket for the separate domestic leg. If it does, tax is due. The zero VAT charge applies only where the passenger stops over at the intermediary airport no longer than is necessary to catch the next onward flight. Longer stopovers attract a VAT charge on the domestic leg - see paragraph 4.4.1.

[83] Positive rate of tax, where applicable, is levied on that part of the journey taking place within the Member State

[6] *It is understood that, although Spanish VAT legislation applies a VAT rate of 16% for Spanish legs of intra-EU/international journeys by air and sea, this legislation is not applied in practice. There is also no set procedure for putting a value on the domestic leg element.*[84]

[7] *For road journeys which commence outside France, travel through French territory, and terminate outside France provided at least ten persons are transported in the same vehicle (Article 262, French General VAT Code). The relief does not apply if there is any break in the journey within France or if the service is performed by a transport operator with a "place of establishment" in France. For road journeys involving the collection of passengers at a French airport (for onward transportation to a destination within France), no VAT charge arises (under the terms of Article 73F, Annex III of the French VAT Code) if the operator provides a document detailing particulars of the vehicle and the number of passengers. The document must be stamped by the Customs authorities.*

Table A3.2 in Appendix 3.1 provides a detailed assessment of the economic rationale and impact of these variations in rates.

From an analysis of the VAT rates for intra-EU markets, it emerges that the most significant distortion is between rail and air travel in certain routes.[85] ***A number of significant routes to and from France are exempted, reflecting the recognition of the competition between HSR and air***.

In some markets, particularly Germany and Austria, there is a substantial additional VAT cost on that part of an international rail trip which takes place in either of these States.

Another significant distortion appears to be the levying of VAT on chartered or shuttle coach services, especially where they are competing with chartered air services. As with competition between air and rail, the coach market is faced with a VAT rate of up to 25% compared to a VAT rate on air travel of 0% across the board (with the possible exception of Germany and Spain).

Note that, save for the specific route exemptions in France, there are no differences in VAT treatment between coach and rail; there are therefore no VAT-induced *competitive* distortions between those two modes.

In comparing the treatment between modes, the argument (see section 4.2) that different VAT rates are applied to different modes as a way of correcting existing distortions appears difficult to sustain because:

- as already indicated in Chapter 3, intra-EU transport by rail accounts for a very small proportion of total; it is therefore unlikely that any VAT difference on international journeys could correct any distortions to competition arising from significant subsidies. This is re-enforced by the fact that domestic VAT rates across the modes are the same in almost all EU Member States,
- there is no information to suggest that the rail operators of the countries where VAT rates on rail are positive are subsidised (or more heavily subsidised) compared to the operators where the VAT rates are zero,[86]

[84] Source: KPMG fieldwork 1996: EU air and sea operators.

[85] The positive VAT rates levied for domestic legs of international journeys by rail and coach, are the same as the domestic ones (see Table 4.2 and 4.3) for Austria, Belgium, France, Germany and Netherlands. This implies that in these countries there are no incentives for applying (reduced) domestic rates on the domestic legs of international journeys.

[86] This is based on interviews with the European association.

- rail and coach operators are taxed equally where positive VAT rates are levied and yet coach operators are private companies with no direct support from the government, and
- air operators in some of the countries with positive VAT rates on rail/coach are loss-making.[87]

The main argument, therefore, providing a credible justification for different VAT treatment of air and rail/coach for international journeys is the complexity of international air passenger transport in terms of the potential competition of any number of operators from* different *countries on any route; this implies a real risk of creating competitive disadvantages for national airline operators vis-à-vis other EU and international operators.[88] This has led some governments to apply a zero VAT rate on air, while at the same time maintaining a positive VAT rate on rail/coach. This was not expected to create any significant distortions, as:

- international rail journeys are a very small proportion of total, and
- air was considered to compete with rail/coach in a relatively small sub-segment of the market.

The remainder of this chapter examines the validity of these arguments by providing a quantitative assessment of the distortions created by the existing VAT system both currently and in the future. This follows an assessment of differences in the implementation of the current VAT rules (section 4.4) and differences in the right to deduct input VAT (section 4.5) which affect significantly the extent of the economic impact on demand for business travel of any given differences in VAT rates between air and rail/coach.

[87] Sabena and Austrian Airlines.

[88] This is particularly true for Sabena, Austrian Airlines and KLM for which intra-EU and international journeys represent 100% or the vast majority of their flights - see Figure 2.9 in Chapter 2.

4.5 **Variations in implementation of domestic VAT legislation by Member States**

What is the national practice with regard to the administration of the legislation? Where, and why is national practice different from legislative provisions?

Recognising the potential difficulty in collecting VAT revenues from non-domestic operators, certain countries have implemented simplification procedures to enable them to collect the taxation revenues without imposing the administrative burden of requiring non-domestic operators to register and account for VAT locally. However, it is understood that these reliefs apply only to those "non-resident" operators providing "non-cabotage" services (principally return international trips). Cabotage operators (who "pick up" in other Member States) must register for VAT locally. The local VAT registration rules and reliefs for non-cabotage services are detailed in Table 4.4.

However, notwithstanding the special provisions adopted by certain Member States (principally Austria, Belgium, Denmark, Germany, Spain and the UK), research has revealed that many Member States do not implement the legislative provisions relating to passenger transport services carried out within domestic territory in a uniform manner[89]. This inconsistency of implementation has caused a number of distortions to arise. In general, the distortions impact unfairly on the domestic operators; although (in most cases) non-domestic transport operators are required to account for VAT on the same basis as domestic operators, it is clear that this requirement is not being observed.

[89] Source: KPMG Fieldwork 1996: EU-based air, coach, ferry and rail operators.

Table 4.4: VAT registration requirements: non-cabotage (international) services provided by non-domestic transport operators

Member State	Operator registrable?	Details of special procedures	Legislative reference for special procedures
Austria	Yes (subject to special provisions)[1]	i. If the services are supplied to an Austrian taxable person who would enjoy full recovery of any VAT charges, the VAT registration requirement can be waived ii. For transport involving a foreign registered motor vehicle moving between Austria and a non-EU state, a flat rate tax of ATS 0.60 (ECU 0.05) per passenger per kilometre driven in Austria can be levied as an alternative to normal VAT taxation	Paragraph 20, subsection 4, and paragraph 4, subsection 9 of the 1994 VAT Act
Belgium	Yes (for regular operators)	For non-regular operators (not specifically defined) "spontaneous" declarations of VAT may be made to the authorities in lieu of full registration. These may be yearly for VAT due figures of up to BEF 100,000, (ECU 2593) or quarterly for higher figures[2]	Administrative practice, no legal reference.
Denmark	Yes (subject to special provision for bus transport)	For operators who perform transport in Denmark only "occasionally" (undefined) and use foreign registered buses, it is possible to request taxation at a flat rate of DK0.05 (ECU 0.01) per passenger per kilometre	Paragraph 24, Statutory Regulation 1135 of 12 December 1995.
Finland	No (international services are "outside the scope" of Finnish VAT)	None	None
France	Yes (international services) No (transit services)	None	None
Germany	Yes (but only where services are supplied to non-registered persons)[3]	i. Supplies to VAT-registered persons are taxable under the reverse charge mechanism - no registration is necessary for the supplier. ii. Domestic legs of international flights are zero-rated where the stopover is only long enough to catch the next appropriate flight. iii. The use of buses that are licensed in another country is taxed at DEM0.013 (ECU 0.01) per km per person. This tax is only levied when crossing a border between Germany and a non-EU Member State.	i. s.3(6)(1), VAT Act ii. s.278(2), VAT Regulations iii. s.16(5) VAT Act s.221(3) VAT Regulations Decree of 24 January 1993
Greece	Yes	None	None
Ireland	No	None	None
Italy	Yes, if supplies are made to non VAT registered entities a fiscal representative must be appointed. If all supplies are to VAT registered entities then the reverse charge is applicable.	None	None

Member State	Operator registrable?	Details of special procedures	Legislative reference for special procedures
Luxembourg	No (for national legs at international transport)	None	None
Netherlands	Yes, unless all its supplies are to VAT registered Dutch entities[4]	Provider may agree a percentage of total revenue which is taxable in the Netherlands where journeys involve Dutch and non-Dutch elements.	None
Portugal	Yes	None	None
Spain	Yes, but only if established in Spain[4]	Under normal VAT rules a company can only register if it has a permanent establishment or deemed permanent establishment in Spain.[5]	None
Sweden	No (international services are "outside the scope" of Swedish VAT)	None	None
UK	Yes	i. If the recipient is an entrepreneur registered for VAT in the UK a tax shift mechanism may place the liability on the recipient ii. If the supplies are principally zero-rated the entrepreneur may opt not to register, even if the turnover exceeds the normal limit of £48,000 (ECU 57923) per annum	i. VAT Act 1994 s(2) and Schedule 5(9) ii. VAT Act 1994 Schedule 1(14)

Notes:

1. *There is currently a technical requirement for non-domestic operators to account for VAT. However, this requirement can be avoided if the operator is based in a country which itself does not tax Austrian operators who provide passenger transport services in that country. These arrangements are known as "reciprocity agreements" and enable non-domestic operators to escape a VAT charge in Austria if Austrian operators escape a VAT charge in the country of the non-domestic operator. The agreements take priority over other relevant legislation within Austrian VAT law.*

2. *In Belgium, the "spontaneous" declaration procedure was introduced after 1 January 1993 in an attempt to secure revenues following the withdrawal of the "flat rate" charge for non-domestic operators (which used to be levied at the external Belgian border). However, the spontaneous declaration procedure has not been successful because the Belgian authorities requested a retrospective payment (stretching back to 1 January 1993) from non-domestic operators.*

3. *Within Germany, the Belgian Trade Association (which represents Belgian Coach Operators) has negotiated a special deal with the German authorities. The Trade Association acts as a single fiscal representative on behalf of the Belgian operators providing passenger transport services on German territory. However, the VAT reclaimable under the 8th Directive procedure is off-set by a notional output VAT charge on services performed within Germany. It appears that it is only the Belgian Coach Operators which have reached a specific agreement along these lines.*

4. *Within the Netherlands and Spain, unofficial arrangements operate which enable the authorities to secure the tax base by denying non-domestic operators an 8th Directive refund claim for fuel and toll fees.*

5. *For VAT purposes, a company has a permanent establishment in Spain in the following cases:*
   - *if it has an office, factory, installation, or shop in Spain;*
   - *if it has an agent with powers to act in the name and on behalf of the company in Spain;*
   - *if it carries out construction work lasting over 12 months;*
   - *if it owns or rents a warehouse on a permanent basis for the storage of its goods;*
   - *if it has a centre of purchase of goods or services in Spain.*

For ground transport, the removal of fiscal controls between Member States has increased the scope for distortion and it appears that EU fiscal authorities are increasingly unable to administer the collection of VAT payable on passenger transport services provided within their borders by non-domestic transport operators, particularly in circumstances where those operators have no place of business in the Member State concerned.

The implementation distortions, by transport mode, are outlined in detail below. However, notwithstanding the effect of the examples which follow, it is clear that "single ticketing", where a traveller contracts with a single operator for a journey which is split into different modes (or separate trips), allows VAT distortions to arise. For example, a UK court case involving Virgin Atlantic Airways concluded that the airline was making a single supply of a zero-rated journey (from or to a place outside the UK) in circumstances where the airline provided limousine transport to the airport of departure (or from the airport of arrival). If supplied as a separate service, the limousine supply would be subject to VAT at 17.5%. Similarly, travellers purchasing a single ticket for a journey which commences or terminates outside France, but involves a change of aircraft or stopover at the end (or commencement) of a domestic French leg of the journey, would not incur a French VAT charge in respect of the journey which takes place within France. However, if a separate ticket was bought for the French leg, a French VAT charge would apply to that leg.

4.5.1 ***Implementation distortions: air***

What examples are there of local practice differing from national legislation?

The VAT treatment of domestic and international (including intra-EU) air journeys, respectively, differs for most EU Member States[90]: domestic journeys are taxed at a positive VAT rate whereas international journeys are taxed at a zero rate. This has the following implications:

- first, for those journeys with a stopover within a Member State of the EU (either inbound to the EU or outbound from the EU), the possibility arises of different VAT treatment between the operators of that Member State and other operators, and
- second, where the positive VAT rate is applied in practice on the domestic leg of a journey, demand for air passenger transport would favour a direct trip (e.g. New York–Berlin) rather than a stopover trip (e.g. New York–Frankfurt–Berlin).

Data for Germany illustrates the significance of such a distortion. Some 5% of international flights, including intra-EU, originating in Germany[91] are broken by a domestic stopover. For example, a passenger can buy a through ticket from Berlin to New York where they stop over in Frankfurt. Since air tickets are sometimes valid for one year, the passenger may legitimately break this journey in Frankfurt. The German fiscal authorities currently consider that in such circumstances the Berlin to Frankfurt leg represents a domestic German journey which is subject to German VAT at 15%. Using a sampling procedure, the German authorities collect VAT from a major German airline, in respect of the domestic leg (broken by a stopover) of international journeys. The additional VAT payable by the German operator amounts to several million

[90] The exceptions are Denmark, Ireland and the UK.

[91] Source: German airline industry.

Deutschmarks each year. It is understood that non-German airlines operating similar stopover arrangements within Germany may not be accounting for the additional VAT charge.[92]

The German position differs markedly from that of the French fiscal authorities; for example, flights from Nice to New York with a stopover in Paris do not attract a French VAT charge on the domestic legs as long as both trips are taken together on one ticket.

In Spain, a VAT charge of 16% technically applies to the distance travelled within Spanish air space for journeys originating or terminating in Spain, although it appears that the Spanish fiscal authorities do not apply these provisions, either to Spanish or non-Spanish operators.[93]

In terms of inter-modal competition, the distortion implies that for stopover air journeys where air competes with rail, for the whole journey, and the domestic leg of an international air journey is taxed positively[94], the relative tax-created competitive advantage for air will be smaller. The significance of this is likely to be small, however, given:

- the small proportion of stopover trips as a share of total (as indicated by the German data), and
- the fact that rail will only compete with air for the full journey in an even smaller proportion of these trips.

***In addition, where the domestic leg of an international air journey with a stopover is not taxed in practice, an additional distortion is* introduced *between air and rail in the* domestic *market*[95].** This is likely to occur where there is an important HSR network which competes with air such as in France (although France has implemented a number of exemptions for specific cross-border rail routes) and will become more larger as the HSR network develops in the future (unless further exemptions are introduced). In terms of the other major markets where rail competes domestically with air there is no distortion since:

- in Germany, a positive VAT rate is levied on air for domestic routes, and
- in the UK, the domestic VAT rates are also zero.

4.5.2 *Implementation distortions: road*

What examples are there of local practice differing from national legislation?

Effective, consistent enforcement of the existing measures for road transport is very difficult for most Member States. Fieldwork suggests that the theoretical obligation upon coach operators to register for VAT in each Member State in which they physically perform services is largely ignored.

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[92] Source: Airline operators interview programme.

[93] Source: EU airline industry.

[94] i.e. mainly Austria, Belgium, Germany, Italy, Netherlands and Spain (in theory, Finland, Greece, Luxembourg, and Sweden would also be included).

[95] This is similar to the distortion that exists in intra-EU/international routes where zero VAT rated air competes with positively VAT rated rail.

Before the introduction of the EU single market on 1 January 1993, some Member States collected the VAT payable on domestic legs of intra-EU or international transport at the international frontier. The abolition of fiscal frontiers has, however, left most states without any effective mechanism to control the activities of other states' coach operators on their territory; it is practically impossible to police the movements of the foreign operators' coaches in and out of the country. The result is significant distortions across the EU for some coach operators, especially where local operators can be forced to apply a VAT charge which foreign ones can in practice escape without levying. It is understood that these distortions include:[96]

- inconsistent enforcement of VAT rules for domestic legs of international transport in Austria. Incoming or outgoing coaches are required to pay VAT, at the external EU border, on an intermittent basis;
- within Germany, the VAT rules for domestic legs of intra-EU transport are similarly enforced inconsistently. Some non-German coach operators are required to register and account for VAT in Germany whereas others are not. Further, the enforcement of the "flat rate" charge (which is levied per kilometre) is also inconsistent. However, the Trade Association representing Belgian coach operators has negotiated a specific agreement with the German fiscal authorities. Under this agreement, the trade association acts as the fiscal representative of the Belgian coach operators and is responsible for organising input VAT refunds via a local VAT registration for the operator. However, any input VAT refundable is offset by the notional output VAT due on kilometres travelled by the Belgian operators within Germany. Aside from the specific agreement relating to Belgian coach operators, it is understood that operators based in other EU Member States are not, generally, being required to account for German VAT for coach journeys performed within German territory. It is understood that the flat rate charge is usually restricted to operators entering the EU via Germany it is therefore enforced on the Czech, Polish and Swiss borders.
- in the Netherlands, the Dutch fiscal authorities do not enforce the provision which requires operators based outside the Netherlands to register and account for Dutch VAT. Instead, it is understood that the Dutch authorities collect part of their VAT by refusing EU Eighth Directive refund claims made by operators in respect of VAT incurred on fuel purchased within the Netherlands;
- within Belgium, the fiscal authorities do not strictly enforce the requirement for non-domestic coach operators to register and account for VAT for journeys undertaken within Belgian territory. Non-domestic coach operators are required to make "spontaneous declarations" if they undertake "occasional" tourist services within Belgian territory. However, the introduction of this new provision was accompanied by a demand for a retrospective VAT payment (stretching back to 1 January 1993) and it is understood that few non-domestic coach operators are complying with this requirement. Before 1 January 1993, a flat rate formula applied (similar to Germany) which was dependent on the size of the coach and the type of the service. The flat rate payable was computed on a daily basis;
- within France, there is discrimination between French and non-French operators (it is understood that French operators are required to account for French VAT on French

[96] Source: International Road Transport Union.

legs of intra-EU journeys terminating or commencing in France whereas non-French operators are not);

- within Greece, although there is a technical requirement for non-domestic coach operators to register and account for VAT for journeys performed on Greek territory, this requirement is not enforced by the Greek fiscal authorities;
- within Spain, the fiscal authorities do not enforce the legislative provisions which require non-domestic operators performing passenger transport services within Spain to register for VAT locally. However, the Spanish authorities secure part of the VAT due by refusing EU Eighth Directive refunds for VAT incurred on road tolls and fuel purchased within Spain.

4.5.3 *Implementation distortions: maritime and inland waterway travel*

What examples are there of local practice differing from national legislation?

Because of the widespread exemptions for domestic legs of intra-EU and international sea travel, the practical distortions in this sector are fewer. Only Spain applies a positive rate of VAT to domestic legs of sea travel. However, it is understood that the Spanish fiscal authorities do not enforce this rule strictly and, as a result, ferry and cruise operators are not required to account for VAT on ticketing revenue derived from journeys wholly or partly made within Spanish waters. Even if an inspector were to pursue an assessment of VAT on a domestic leg, there also appears to be no set procedure laid down for placing a tax value on an internal leg of an international journey.[97]

For inland waterway transport, the requirement for non-domestic operators to account for VAT on journeys wholly or partly taken within Belgian, French, Dutch and Spanish inland waterways does not appear to be enforced by the fiscal authorities.[98] This contrasts with the position of domestic operators who are required to account for VAT on such income in their appropriate home Member State.

4.5.4 *Implementation distortions: rail*

What examples are there of local practice differing from national legislation?

The possibility of inter-modal competitive distortions between air and rail, arising from different VAT treatment of the domestic legs of international air journeys has already been discussed in the Air section. The existence of different VAT rates for domestic and international journeys in four Member States[99] provides the possibility of a distortion, where the domestic leg (e.g. Rome–Milan) of an international rail trip with a stopover (e.g. Rome–Milan–Nice) could be taxed at the international rate of 0%, neutralising any competitive advantage provided to air, as a result of a domestic leg being taxed at the international rate. This seems more of a theoretical possibility however, as:

- in three out of the four countries where such a discrepancy arises (Luxembourg, Portugal and Sweden) stopovers are unlikely to be of any significance, and

[97] Source: KPMG Fieldwork 1996: EU Ferry Operators.

[98] Source: KPMG Fieldwork 1996: EU Ferry and Cruise Operators.

[99] Italy (0% international, 10% domestic), Luxembourg (0%, 3%), Portugal (0%, 5%) and Sweden (0%, 12%)

- in Italy, (10% for domestic and 0% for international) VAT rates are the same across all modes. As long as domestic legs of international journeys by air and rail are treated in the same way by the fiscal authorities, no inter-modal competitive distortions would arise.

There is no evidence to suggest that any very large VAT-related distortions occur in the European railway industry as a result of *application* of the VAT rules. Unlike the situation with respect to roads, the enforcement process is eased by the fact that the railway sector in most countries is run by a single state-owned monopoly (even in Britain, where rail transport has been privatised, there are a small number of large operators rather than the immense number of coach firms). Cross border travel is governed by agreements between the monopolies, making the issue of cross-border trips by unregistered entities much less significant.

Ticketing revenues are distributed amongst European railway operators according to the total distance travelled, for all journeys, in each Member State. These revenues are distributed through a pan-European clearing house system. Legally, the "home" railway operator acts as principal for all railway journeys undertaken on track physically located in its home Member State.

This structure ensures that railway operators, in each Member State, receive all ticketing revenue for journeys physically undertaken within their country and, as such, are able to account accurately for the VAT payable. Since no non-domestic operator acts as principal for journeys provided outside its home country, there cannot be any requirement for railway operators to register and account for VAT outside their home Member State.

However, some distortions may arise on particular journeys. Finland and Sweden treat international rail journeys as outside the scope of VAT in their entirety, whereas domestic rail journeys are taxable (at 6% and 12% respectively). The potential exists for a passenger buying a fare to a border town to save money by paying the higher net fare to the first stop past the border, since this fare will have no VAT.

Research suggest that there is a least one rail route in Sweden where this is a practical problem, this being Stockholm - Lulea - Narvik. This is a route of over 1,000km where travellers who book a ticket to the Norwegian stops (all of which lie along the final 50km of the line) can enjoy a 12% VAT saving on the whole journey, making it economical for travellers to Northern Sweden to buy a ticket to Norway and get off the train early[100].

Similar situations could occur for journeys to Finland and Finnish journeys to Sweden, Norway and Russia, although we have no specific information on these routes in practice. They could have two effects:

i. Distortion of ticketing revenue allocation

ii. Distortion of competition with air travel (a traveller going by air from Stockholm to Northern Sweden will have to use an internal flight which goes to Lulea, for instance, and terminals there, no chance to avoid VAT).

[100] KPMG Fieldwork 1997

4.5.5 ***Implementation distortions: modal***

Are the VAT-induced distortions (created by legislative treatment and national practice) affected by other indirect taxes?

There are differing applications of other indirect taxes between modes of transport. For example, exemptions from excise duties on fuel are possible for airline and maritime transport, whereas railway operators incur a positive rate of VAT on electricity supplies. Although this VAT is deductible, operators must finance the cost in the period between payment and refund.

Further, there are differences in the VAT treatment of passenger transportation vehicles. For example, the Sixth Directive[101] provides VAT reliefs for the purchase, lease and repair of air and maritime vehicles, whereas the purchase of rail and road vehicles invariably bear a VAT charge which transport operators must finance between payment and deduction. In certain Member States, for example Ireland, where domestic transport is VAT exempt, no deduction is technically allowed for costs related to domestic journeys. International transport is, however, exempt with credit. This tends to hit mainly the bus and rail sectors: sea and air operators enjoy full or nearly full deduction since most of their business is international (domestic legs count as "international" for recovery purposes).[102] An exception to this rule is, however, a major domestic air operator, Ryan Air. Since the operator's supplies are principally "exempt without credit", it suffers an irrecoverable VAT cost on its expenditure. However, since Aer Lingus is principally an international operator, its supplies are principally "exempt with credit", enabling related recovery of input VAT.

Across the EU, airport taxes and/or other charges are commonplace. Out of the EU15, only Finland and Spain do not levy surcharges to passengers. The type and size of the charges involved, summarised in Appendix 4, varies substantially between Member States both for international and domestic flights. All of the EU15 except for the United Kingdom treat EU flights as international; the UK has one departure tax for EU and domestic flights and another for all other non-EU international services. Most charges and taxes are defined as being either departure taxes or passenger security taxes, although whether these taxes are always allocated to the same organisation (eg the airport, government etc) is not clear.

In the context of this study, a distinction needs to be drawn between those taxes that are in effect service charges (e.g. for providing security at the airport) and those that are pure taxes – that is, charges that go to either local or central government and are not used specifically for the purpose of directly providing a service to the payer associated with travelling.

In summary, the main results of the analysis of the practical distortions are that:

- ***there are significant differences in the way individual Member States apply the VAT rules; the key ones relate to the treatment of domestic (or transit) legs of international journeys for air and coach;***
- ***in the air passenger transport sector, Germany does apply the domestic VAT rate to German legs of some international air journeys; administrative difficulties have the***

[101] Article 15: EU Sixth Directive.

[102] Article 17(3) of Irish VAT code: Clarification by KPMG Dublin

result that non-German operators are less likely to be paying tax for such legs. France, on the other hand, applies a 0% rate (the international VAT rate) to French legs of international journeys when the operator issues a single ticket which covers the whole journey; and

- ***such discrepancies do have implications for the competitive position of different operators, within the same mode; the relatively small number of journeys affected means, however, that the impact on inter-modal competition is likely to be negligible.***

4.6 **Current VAT system: differences in the right to deduct input VAT**

What are the current rules for the deduction of VAT incurred on passenger transport services? How do these rules work in practice and what is their effect?

The Sixth Directive provides that tax shall "*in no circumstances be deductible on expenditure which is not strictly business expenditure, such as that on luxuries, amusements or entertainment*".[103] The right to treat certain categories of expenditure as non-deductible has been allowed since the adoption of the Second Directive on 11 April 1967.

Businesses making non-taxable supplies[104] and tour operators[105] are unable to claim full credit for input VAT incurred. A detailed description of the current rules is provided in Table 4.7.

It was initially planned that the current situation with respect to deduction would be strictly temporary. The European Commission had drafted a proposed Twelfth VAT Directive to harmonise the VAT deduction rules in each Member State. This would, essentially, have made travel costs 50% deductible. However, since there was no unanimity within the Council of Ministers, the draft Directive was withdrawn by the Commission.

[103] Article 17, EU Sixth Directive.

[104] Defined within Article 13: EU Sixth Directive.

[105] Article 26: EU Sixth Directive.

Table 4.7: Tax deduction/refund arrangements at Member State level

Member State	Passenger Transport	Documentation Required	Road Fuel
Austria	Deduction Permitted	Travel ticket is acceptable so long as it identifies the supplier's name and address and the net and VAT values. International tickets must itemise the element taxable in Austria in order to be acceptable.	Deduction Permitted
Belgium	Deduction Permitted	Travel ticket acceptable evidence for domestic journeys; tax certificate required for domestic legs of international rail journeys	maximum 50% of tax incurred deductible
Denmark	Deduction Not Permitted: business travel services exempt	None	Deduction Not Permitted
Finland	Deduction Permitted	Travel ticket acceptable if the name of the operator, the date, price and amount of tax are shown	Deduction Permitted
France	Deduction Not Permitted	None	Deduction Not Permitted
Germany	Deduction Permitted	Full tax invoice required if the ticket price exceeds DM 200. In practice, a travel ticket is usually accepted as appropriate evidence provided suitable information is shown. For intra-EU rail journeys, a tax certificate, showing tax paid on the German leg of the journey, is required.	Deduction Permitted
Greece	Deduction Not Permitted	None	None
Ireland	Deduction Not Permitted	None	Deduction Not Permitted
Italy	Deduction Not Permitted save for exceptional circumstances[1]	None	Deduction Not Permitted
Luxembourg	Deduction Permitted	Full tax invoice required	Deduction Permitted
Netherlands	Deduction Permitted	Air travel: full tax invoice required Rail travel: travel ticket acceptable	Deduction Permitted
Portugal	Deduction Not Permitted	None	Deduction Not Permitted
Spain	Deduction Permitted if the journey is classified as a business trip for Corporate Income Tax purposes[2]	Full tax invoice required	Deduction Not Permitted
Sweden	Deduction Permitted	Full Tax Invoice required under Tax Law; in practice a travel ticket, (showing the amount of tax and the VAT identification number of the operator) is accepted	Deduction Permitted
United Kingdom	Deduction Permitted, but most transport taxed at a zero-rate	Simplified tax invoice for transactions below £100 in value (otherwise full Tax Invoice required)	Deduction Permitted

Source: KPMG International VAT Network

Notes

1. *This is not clearly defined in law, but would include, for instance, transport purchased for resale.*
2. *There is no clear definition of "business trip" under Corporate Income Tax law but, broadly, it must be demonstrable that the trip has a purpose in generating income for the company.*

Currently, tax incurred on business travel is not eligible for deduction in Denmark, France, Greece, Italy, Ireland and Portugal. Elsewhere, those Member States which tax passenger transport services permit deduction. In addition, Member States impose differing requirements for documentary evidence to support deduction. In certain circumstances, the travel ticket is sufficient whereas in other cases a full tax invoice is required.

In those Member States which permit tax deduction on business travel, most (Austria, Belgium, Finland, Germany and Sweden), allow the travel ticket to serve as the appropriate evidence to support tax deduction for air travel. However, others (Luxembourg , the Netherlands and Spain), require the business traveller to obtain a full tax invoice from the transport provider. For rail travel, the position is slightly different. Those Member States, with the addition of the Netherlands, which allow the air ticket to be treated as evidence to support tax deduction for business travellers also permit the rail ticket to be so used. However, these arrangements apply only for domestic travel. For cross-border journeys, business travellers must approach the railway operators for a tax certificate which details each operator's share of the ticketing income. This document enables the customer to calculate the amount of tax deductible in each Member State.

For example, for a rail journey from Brussels to Frankfurt, the customer will be charged Belgian VAT on the Belgian leg of the journey and German VAT on the German leg of the journey. However, the customer will receive a single ticket, priced in the single currency, for the whole of the journey. To qualify for a tax deduction, the traveller must contact the Belgian and German railway authorities respectively and obtain a tax certificate, from each, which can be used subsequently for input VAT deduction purposes. The incidence of businesses requesting such information is not thought to be widespread.[106]

Although business customers may also seek similar tax certificates from coach operators, there is no evidence that they do so on a regular basis.[107] Intra-EU maritime and air transport remains principally exempt (with refund) from VAT so the tax deduction issues, in a cross-border context, do not arise.

For business travellers, the cost of tax deduction is twofold. First, in securing the proper documentation to enable a deduction claim to be entered; because of difficulties in arranging the relevant documentation for cross-border journeys, many businesses forego the opportunity for input VAT deduction.[108] Second, the cost of the VAT charge in those Member States which do not allow input VAT deduction for business travel.

4.6.1 *Distortions due to variations in VAT deductibility for business travel*

From an economic perspective, variations in the right to deduct VAT are a form of competitive distortion because travel costs in those States that allow full deductibility of VAT are likely to be lower, reducing costs to business and giving a competitive advantage. The area where the level of distortion is higher is in the case of the consumption of motor fuel. The rate of VAT levied on fuel is the standard rate and this,

[106] Source: KPMG Fieldwork 1996: EU Railway Operators.

[107] Source: KPMG Fieldwork 1996: EU bus and coach operators.

[108] Source: KPMG Fieldwork 1996.

allied to the non-deductibility of input VAT on fuel in some Member States, means that some businesses pay up to 25% more for their fuel than others.

The overall effect of variation in deductibility is likely to be small, however, as transport costs form only a small proportion of total costs. One official estimate[109] suggests that transport costs represents no more than 5–10% of an average business's cost structure so the VAT costs for passenger transport purposes, even taking fuel VAT costs into account is likely to have little effect on the ability of most businesses to compete.

In terms of competitive distortions between modes of transport for international journeys where different rates of VAT apply, the extent of the impact of deductibility will depend on:

- the significance of business travel on any particular segment, and
- the specific route, in terms of the deductibility rules in the origin and destination countries.

In the quantitative assessment of the distortions that follows those two parameters have been taken as much as possible into account. Furthermore, an adjustment has also been made about the extent to which business reclaims VAT on international journeys, even where VAT is deductible, in view of the practical difficulties mentioned above.

[109] R Higman, *The Economics of Transport Policy: the cost of sustainability*, 1995, Conference on Devising a Transport Strategy, UK Department of Transport.

4.7 **Quantification of the economic distortions of current VAT system**

Taking all of the above together, what are the quantifiable distortions of the current VAT system now and in the future?

The main forms of market distortion can be defined in terms of:

- price due to (a) variations in tax rates, tax deductibility rates and other tax treatment, and (b) variations in the cost conditions faced by different operators due to government support;
- the regulatory environment and extent of subsidies; and
- other distortions, such as externalities not reflected in the price charged to the consumer.

Clearly, market distortions can also occur in other parts of the regulatory and financial regimes of Member States, such as those caused by preferential treatment with respect to financing and funding of investment. In some cases, these are likely to have a large impact on the operation of the transport market.

The objective of this section is to quantify the economic impact of the distortions in demand for passenger transport which arise as a result of varying VAT treatment of modes of transport (i.e. as a result of price differences due to (a) above). In order to achieve this, it is important to treat all other factors affecting the cost conditions faced by operators as given and constant; this is a strong assumption but is necessary in order to enable the analysis to provide a quantitative assessment of the tax created distortions alone.

Any assessment of other distortions can then be compared or balanced against the quantitative assessment of the tax created distortions. Our assessment of these other distortions, primarily the regulatory environment, the characteristics of particular modes and environmental distortions are discussed in Section 4.8.

4.7.1 ***The relevant transport sub-segments***

The passenger transport segments where there may be a competitive economic impact from VAT created distortions are segments where more than one mode competes and there are differences in the VAT rates between modes and countries. These are

- medium distance segment, current HSR routes where rail is positively taxed today, for business and leisure,
- medium-distance segment, future HSR routes where rail is positively taxed today and air is zero VAT rated, for business and leisure,
- medium-distance segment, overnight rail services which are positively taxed today, for business, and
- long distance segment, where rail and coach face positive taxes and air is zero VAT rated and air competes with rail (conventional/HSR) and coach for the (very) price sensitive leisure market.

For each of these sub-segments, the following steps are undertaken in order to provide a quantitative assessment of the distortions:

- first, assumptions are made about the extent to which any differences in VAT treatment between modes are passed on to prices,
- second, assumptions are made about the share of trips which is business and VAT deductible,
- third, a series of cross-price elasticities are applied, using current estimates of elasticities that reflect closely the characteristics of the routes examined,
- fourth, a quantitative estimate of the 'diversion' or 'transfer' of demand for trips from rail (and coach in the long distance leisure market) to air as a result of higher taxation is made.

The complexity of the passenger transport markets implies that a range of estimates are produced; this illustrates the relative significance of the assumptions underlying the results. Estimates of the distortions for each of the sub-segments mentioned above are presented in detail below.

4.7.2 *Current and future HSR routes*

Seven Member States levy VAT on intra-EU rail transport at a positive rate and these rates vary in line with national standard rates of VAT. Table 4.8 summarises the current position.

Table 4.8: VAT Treatment of domestic legs of intra-EU journeys by rail and coach

Outside the scope of VAT	**VAT exempt with credit or levied at 0%**	**VAT levied in theory but not enforced in practice**		**VAT levied at a positive rate**	
Finland	Denmark[1]	Spain	+7%	Austria	+ 10%
	Ireland			Belgium	+ 6%
Sweden	Italy			France	+ 5.5%[110]
	Luxembourg			Germany	+ 15%[111]
	Portugal			Greece	+8%
	UK			Netherlands	+ 6%
				Spain	+ 7%

Source: See table 4.3

Notes

1. *Tourist bus services are taxed at 25%.*

[110] In fact, France does not charge VAT on transit traffic through the country and has specific exemptions for certain intra-EU rail trips, see Appendix 4.2.

[111] Note that Germany does not apply its right to levy positive VAT rates on the distance travelled over Germany of international air journeys on any of the routes examined.

4.7.3 *Assumptions underlying the quantitative estimates*

In order to quantify the effects of the different VAT rates, it is necessary to make a number of assumptions[112]. These are as follows:

Assumption 1: *the extent to which any VAT charge is passed on to the final price paid by the passenger*. From the point of view of the individual operators, the extent to which any tax costs will be passed on to consumers will depend on their cost structure (see section 4.2) and the degree of competition that they face. The flatter their (average) costs structures and the more competition that exists in the market, the less scope there will be for absorption of tax costs by the operator and the higher will be the degree of pass through.

In what follows three scenarios are presented,

- a perfectly competitive case where all the costs arising from the VAT charge are passed through;
- an imperfect competitive case where only 50% of these costs are passed through; and
- a central scenario with 60% to 90% of costs passed through, with the exact amount determined by the extent of competition on the particular route.

Assumption 2: *the percentages of passengers that are travelling for business and non-business reasons*. For many business passengers, it is possible to reclaim input VAT from the price of a ticket used for business purposes. For these travellers the real cost of a ticket is thus the same regardless of the rate of VAT charged. However, it is also the case that in countries where businesses can deduct input VAT from business travel, there are certain sectors which are already exempt from VAT and thus do not have a right of deduction. Furthermore, in some countries business travellers do not have the right to reclaim VAT whatever their VAT status. These variations mean that for any particular journey the number of travellers that are affected by differential rates of VAT will vary.

For example, an international rail journey commencing or terminating in France will attract 5.5% VAT on that part of the journey within France (save for exemptions, see Appendix 3.2). As business passengers cannot reclaim the VAT, all passengers will pay the full, VAT-inclusive, price. On the other hand, for an international rail journey commencing or terminating in the Netherlands, only non-business travellers and business travellers in the sectors which are VAT-exempt will be affected. Thus a significant number of (business) travellers will be able to reclaim VAT and will therefore be unaffected by the difference in VAT treatment between rail and air[113]. This example also applies to coach travel which is significant in the long distance leisure segment only.

The proportion of business passengers is assumed to range between 20% and 30%[114] and reflects the amount of leisure passengers, particularly tourists, that a route is likely to attract. For business travellers who have the right to deduct VAT, the assumption is made that 50% of business travellers do not enter a claim for VAT incurred on the journey.

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[112] The objective is to provide an upper and lower limit of the tax created distortions and we have therefore made the same assumptions across all routes examined.

[113] In practice, as already indicated not all business passengers will reclaim their VAT because of the administrative issues involved.

[114] This assumption is consistent with the business–non-business split shown in Table 3.2.

This reflects an estimate of the size of the VAT-exempt sector and an additional allowance for the disincentive effect of complicated deductibility procedures.

Assumption 3: *assumptions about cross-elasticities of demand between the modes*. A cross-elasticity of demand measures the impact of a price increase in one mode of transport on the demand for another mode of transport. As mentioned earlier, studies have found that the average cross-elasticity of demand between rail and air transport is about 80% with estimates ranging from 50% to 150%. A cross-elasticity of demand of 80% between rail and air will mean that a 10% increase in rail fares will cause, all other things being equal, a 8% switch in the demand for transport away from rail towards air. These three values of cross-elasticities 50%, 80% and 150% are used in the modelling to produce a high, low and central scenario and represents the full range of possible outcomes. The high and low values of cross-elasticity of demand between coach and air transport used in calculating the distortions in the long distance leisure market are 50% and 150% respectively.

4.7.4 *VAT related distortions in the HSR segment*[115]

Table 4.9 sets out the central scenario estimates of the distortions that arise from the existing VAT system, on the current and future routes identified under the HSR segment[116]. In order to illustrate their calculation, the London–Brussels figures are discussed below in more detail. In addition, Table 4.10 shows the worst (first four columns) and best (last four columns) case estimates of the existing distortions. These two extremes have been produced by varying the assumptions about pass-through of VAT costs to fares, and the assumptions of price-elasticity for rail and for the cross-elasticity of demand between air and rail.

Table 4.9 shows that in the current intra-EU HSR segment, it is estimated that, as a result of the VAT difference, 15,300 passengers are currently travelling by air rather than rail and that 3,825 passengers are not travelling at all. By 2005, the estimates suggest that the HSR segment might have around 115,915 fewer passengers if the existing VAT induced distortions continued; this consists of 92,732 who have shifted to air travel and 23,183 who are not travelling at all. In order to put these figures in perspective, the total size of the current HSR segment has been estimated at 10 million trips currently, and 32 million trips in 2005; the distortions represent, therefore about 0.5% of the future HSR segment.

[115] Coach travel is not included in the HSR segment as there is effectively no competition between air or high speed rail services and coach travel.

[116] These figures should be treated as indicative estimates rather than forecasts.

Table 4.9: VAT-related distortions in the HSR segment

	Central Scenario[1]						
		Passenger switching			Passengers generated		
	VAT effective price distortion (% of rail price)	**No. of passen-gers**	**% of HSR traffic**	**% of HSR and air traffic (HSR segment)**	**No. of passen-gers**	**% of HSR traffic**	**% of HSR and air traffic (HSR segment)**
HSR segment in 1994							
London–Brussels	1.3%	15,300	1.0%	0.4%	3,82	0.3%	0.1%
London–Paris	0.0%	0	0.0%	0.0%	0	0.1%	0.0%
Total		**15,300**	**0.4%**	**0.2%**	**3825**	**0.1%**	**0.0%**
Grand Total [2]		**19,125**	**0.5%**	**0.2%**			
HSR segment in 2005							
London–Brussels	1.3%	15,701	0.3%	0.3%	3,92	0.1%	0.1%
London–Paris	0.0%	0	0.0%	0.0%	0	0.0%	0.0%
London–Amsterdam	1.3%	10,248	0.5%	0.3%	2,56	0.1%	0.1%
London–Koln	4.1%	12,086	1.4%	1.0%	3,02	0.4%	0.2%
London–Frankfurt	4.9%	39,479	2.6%	1.6%	9,87	0.7%	0.4%
Stockholm–Copenhagen	0.0%	0	0.0%	0.0%	0	0.0%	0.0%
Gothenburg–Copenhagen	0.0%	0	0.0%	0.0%	0	0.0%	0.0%
Paris–Brussels	1.3%	1,133	0.2%	0.2%	283	0.0%	0.0%
Paris–Amsterdam	2.7%	6,131	0.5%	0.4%	1,53	0.1%	0.1%
Paris –Koln	3.8%	3,288	0.8%	0.6%	822	0.2%	0.2%
Rome–Munich	2.2%	1,957	1.2%	0.7%	489	0.3%	0.2%
Paris–Milan	0.0%	0	0.0%	0.0%	0	0.0%	0.0%
Luxembourg–Strasbourg	0.0%	0	0.0%	0.0%	0	0.0%	0.0%
Brussels–Amsterdam	3.1%	1,693	0.4%	0.4%	423	0.1%	0.1%
Amsterdam–Koln	3.7%	1,016	0.5%	0.4%	254	0.1%	0.1%
Total		**92,732**	**0.4%**	**0.3%**	**23,183**	**0.1%**	**0.1%**
Grand Total [2]		**115,915**	**0.5%**	**0.4%**			

Source: KPMG analysis

Note: [1] Central Scenario assumes a cross-elasticity of demand between rail and air of 80% and a pass-through between VAT costs and fares between 60%-90% dependent on the amount of competition on a particular route

[2] Combined total of passengers not travelling and those who have switched to air.

Table 4.10 shows that in the current intra-EU HSR segment, the worst case estimates could mean that as many as 40,500 passengers are currently travelling by air rather than rail as a result of the VAT difference, and that 13,500 passengers are not travelling at all. The best case estimate could be as low as 6,000 and 600 respectively. By 2005, the estimates suggest that the HSR segment might have anywhere between 36,203 and 295,900 fewer passengers if the existing VAT induced distortions continued; the distortions represent a range of 0.2% to 1.3% of the future HSR segment.

In terms of the routes most affected there are clearly routes connecting the high VAT rate countries (Germany, Netherlands, Belgium) with a relatively high proportion of the trip undertaken in the high VAT rate country; these are: Amsterdam–Koln Paris–Koln, London–Frankfurt, London–Koln and Brussels–Amsterdam.

To aid understanding of the figures in the first column, consider the worst case distortion for London–Brussels in the current 1994 market. It is necessary to begin by estimating the effective rate of VAT for each journey. Recall that VAT is charged at national rates on that part of the journey that takes place within national borders. So for London–Brussels for example, the UK charges 0% VAT on international rail, while Belgium charges 6%. But approximately 33% of the journey takes place in the UK, 33% in France where no tax is charged on transit traffic, and 33% in Belgium. Therefore the VAT charged on a rail ticket between London and Brussels is about 2.0% (one third of the full 6% VAT rate in Belgium). This compares to a zero VAT rate on air travel over the same route.

Continuing with this example, it is assumed that 70% of the passengers are non-business and have to pay the full VAT inclusive price for their travel. Of the remaining 30%, by assumption 2 above, only half do in fact reclaim VAT. In total, therefore, some 85% of passengers are unable to reclaim VAT and are affected by the distortion. When full pass through is assumed between VAT costs and final ticket prices, this means that the VAT distortion is 1.7% of the rail ticket price[117]. This is then the "VAT effective price distortion (% of rail price)" appearing in the first and fourth columns.

By applying estimates of cross-elasticities of demand between air and rail, to these estimates of the effective percentage price distortions, it is possible to derive estimates of the volumes of passengers that are encouraged to shift from rail to air as a result.

In terms of the impact of the distortion on the operators, clearly the most affected rail operators are the ones operating on the London–Brussels route currently; in the future, the German and the Dutch rail operators will also be affected. The "winners", are obviously the air operators of the countries affected; it is important to note, however, that the relative significance of intra-EU travel is greater for British Midland (which flies only on intra-EU routes) and Sabena/KLM (which fly no domestic routes (see figure 2.9)), compared to BA, Air France and Lufthansa.

[117] This is just the 2.0% effective VAT rate multiplied by the 85% of affected passengers.

Table 4.10: Best and worst case estimates of VAT-related distortions in the HSR segment.

	Worst case				Best case			
	VAT effective price distortion (% of rail price)	**No. of passen-gers**	**% of HSR traffic**	**% of HSR and air traffic (HSR segment)**	**VAT effective price distortion (% of rail price)**	**No. of passen-gers**	**% of HSR traffic**	**% of HSR and air traffic (HSR segment)**
HSR segment in 1994		**Passenger Switching**				**Passenger Switching**		
London–Brussels	1.8%	40,500	2.7%	1.1%	0.8%	6,000	0.4%	0.2%
London–Paris	0.0%	0	0.0%	0.0%	0.0%	0	0.0%	0.0%
Total		**40,500**	**1.0%**	**0.4%**		**6,000**	**0.1%**	**0.1%**
HSR segment in 2005								
London–Brussels	1.8%	41,561	0.9%	0.7%	0.8%	6,157	0.1%	0.1%
London–Paris	0.0%	0	0.0%	0.0%	0.0%	0	0.0%	0.0%
London–Amsterdam	2.7%	22,606	1.0%	0.7%	1.2%	3,349	0.2%	0.1%
London–Koln	4.9%	26,661	3.1%	2.2%	2.2%	3,950	0.5%	0.3%
London–Frankfurt	5.8%	87,086	5.8%	3.5%	2.6%	12,902	0.9%	0.5%
Stockholm–Copenhagen	0.0%	0	0.0%	0.0%	0.0%	0	0.0%	0.0%
Gothenburg–Copenhagen	0.0%	0	0.0%	0.0%	0.0%	0	0.0%	0.0%
Paris–Brussels	2.3%	3,737	0.6%	0.5%	1.0%	557	0.1%	0.1%
Paris–Amsterdam	3.8%	16,180	1.4%	1.1%	1.7%	2,413	0.2%	0.2%
Paris –Koln	5.4%	8,675	2.0%	1.6%	2.4%	1,294	0.3%	0.2%
Rome–Munich	3.8%	6,456	3.8%	2.3%	1.7%	963	0.6%	0.3%
Paris–Milan	0.0%	0	0.0%	0.0%	0.0%	0	0.0%	0.0%
Luxembourg–Strasbourg	0.0%	0	0.0%	0.0%	0.0%	0	0.0%	0.0%
Brussels–Amsterdam	5.4%	5,601	1.4%	1.2%	2.4%	830	0.2%	0.2%
Amsterdam–Koln	6.6%	3,361	1.8%	1.5%	2.9%	498	0.3%	0.2%
Total of above		**221,925**	**1.0%**	**0.7%**		**32,912**	**0.1%**	**0.1%**
		Passengers not travelling				**Passengers not travelling**		
HSR segment in 1994		13,500	0.3%	0.1%		600	0.0%	0.0%
HSR segment in 2005		73,975	0.3%	0.2%		3,291	0.0%	0.0%
		Total switching/not travelling				**Total switching/not travelling**		
HSR segment in 1994		**54,000**	**1.3%**	**0.5%**		**6,600**	**0.2%**	**0.1%**
HSR segment in 2005		**295,900**	**1.3%**	**1.0%**		**36,203**	**0.2%**	**0.1%**

Source: KPMG analysis

Note: The "best" case estimates assume a 50% pass-through between VAT costs and fares, a 10% increase in the estimate of the business share, an own price elasticity of -60% and a cross-elasticity of demand between air and rail of +50%. The "worst" case estimates assume a 100% pass-through between VAT costs and fares, a 10% decrease in the estimate of the business share, an own price elasticity of demand of -200% and a cross-elasticity of demand between rail and air of +150%.

4.7.5 ***Distortions related to VAT deductibility in the HSR segment***

To illustrate the relative significance of the different rules of deductibility of input VAT, two alternative scenarios regarding the ability of business travellers to reclaim VAT have been examined in the HSR segment. In the first case, it was assumed that all business passengers can reclaim VAT so that only non-business travellers are affected by the VAT distortion. In the second case, it was assumed that no business travellers can reclaim VAT, so that all business travellers are affected by the VAT distortion.

Where all business travellers can reclaim VAT, the calculations show that, in the worst case scenario, some 4,500 ***fewer*** passengers (or just 0.1% of the current HSR segment) would switch to air, compared to the current situation. In the future, the calculations suggest about 30,100 ***fewer*** (or just 0.1% of the future HSR segment) passengers would switch from rail to air. If no business can reclaim VAT so that all passengers are equally affected by the VAT distortion then the exact opposite occurs with 6,000 and 30,100 ***more*** passengers switching to air in the current and future markets respectively under the worst case scenario.

In terms of passengers who have decided not to travel as a result of the existing distortion, calculations show that under the worst case scenario and where all business travellers can reclaim VAT some 1,500 ***fewer*** passengers (less than 0.1% of the current HSR segment) would decide not to travel compared to the current situation. In the future, this rises to 7,536 ***fewer*** passengers (less than 0.1% of the future HSR segment) who decide against travelling. In the alternative scenario where no business can reclaim VAT the opposite result occurs again with 1,500 and 7,536 ***more*** passengers induced not to travel in the worst case scenario.

These figures therefore suggest that quantitatively, the existence of different rules in terms of the ability of businesses to reclaim VAT has a relatively small effect on demand for travel; harmonisation of the rules (either so that all VAT can be claimed back or no VAT can be claimed back) would have a very modest impact on demand, in the order of ±0.1% of the current or future HSR segments.

4.7.6 ***VAT related distortions in the long distance intra-EU leisure segment***

The long distance leisure market open to competition, derived in Chapter 3, is estimated to be in the region of 11½ million passengers. In terms of the modal shares, the air market is the largest with 8 million passengers, while the rail and coach market accounts for 1.8 and 1.6 million passengers respectively.

Under the existing VAT system, best and worst case estimates for the level of VAT distortion in this market are shown in Table 4.11. The cross-elasticities of demand used in the analysis between rail and air range from 30% to 100%, with an average value of 50%. These are lower than the values used in the HSR distortion analysis, reflecting the lower substitution between modes in longer distance markets. For coach travel, cross-elasticities with air travel are assumed to be slightly higher, similar to the values in Table 4.1, ranging from 50% to 150% with an expected value of 80%.

As an illustration of the calculation, consider the segment, Germany to or from Spain, which has been estimated to have a competitive market in the region of 638,000 trips consisting of 589,000 air and 157,000 rail/coach trips. The derivation of the relevant

market open to competition in the long distance leisure market is described in Appendix 2. In short, the relevant market consists of all long distance coach and second class rail trips, with the exception of Greece, Sweden and Ireland which has an insignificant amount of demand, and air trips by the (very) price sensitive group, consisting of pensioners and the young who have time available to make switching to a slower mode a distinct possibility.

Next, recall that rail and coach travel attract VAT rates of 15% in Germany, 0% in France and 7% in Spain. Assuming that for Germany-Spain journeys, 30% takes place in Germany, 40% in France and 30% in Spain, the effective VAT rate becomes 6.6%. Furthermore, as the market is made up entirely of leisure travellers, VAT cannot be reclaimed and this figure becomes the 'VAT effective price distortion (% of rail/coach price)'. The volume of passengers who have shifted to air travel as a result of this VAT distortions can then be estimated by applying cross-elasticities of demand between the air and rail/coach market

Table 4.11 shows that in the current intra-EU long-distance leisure segment, the worst case estimates could mean that around 191,958 fewer passengers exist in the rail/coach segment as a result of the VAT difference; this consists of 145,563 passengers who have switched to air and 46,395 passengers who are not travelling at all. The best case estimate could mean that there are only 29,113 fewer passengers in the rail/coach segment. These total figures represent a range of 0.3% to 1.7% of the long distance leisure segment, or 0.8% to 5.5% of the rail/coach segment.

Table 4.11: VAT-related distortions in the long distance leisure market.

		Worst case				Best case		
Coach/Rail Segment	**VAT effective price distortion (% of Rail, Coach price)**	**No. of passen-gers**	**% of rail/ coach traffic[1]**	**% of total traffic**	**VAT effective price distortion (% of rail/coach price)**	**No. of passen-gers**	**% of rail/coach traffic**	**% of total traffic**
		Passengers switching				**Passengers switching**		
Austria-Spain	4.1%	320	4.1%	0.2%	2.1%	48	0.6%	0.0%
Austria-UK	9.2%	9,083	10.2%	3.7%	4.6%	1,409	1.6%	0.6%
Belgium-Spain	4.0%	8,159	5.8%	2.7%	2.0%	1,349	1.0%	0.4%
Denmark-Spain	6.0%	5,417	8.9%	3.9%	3.0%	902	1.5%	0.7%
France-Ireland	0.0%	0	0.0%	0.0%	0.0%	0	0.0%	0.0%
France-Portugal	2.8%	13,482	3.5%	1.8%	1.4%	2,150	0.6%	0.3%
France-Spain	3.8%	35,282	4.2%	1.9%	1.9%	5,486	0.7%	0.3%
France-UK	0.0%	0	0.0%	0.0%	0.0%	0	0.0%	0.0%
Germany-Portugal	4.5%	1,326	6.2%	0.7%	2.3%	217	1.0%	0.1%
Germany-Spain	6.6%	7,756	8.3%	0.6%	3.3%	1243	1.3%	0.1%
Germany-UK	8.4%	30,999	10.9%	2.7%	4.2%	5001	1.8%	0.4%
Italy-Netherlands	7.9%	9,027	9.8%	3.4%	4.0%	1443	1.6%	0.5%
Italy-Spain	2.5%	4,363	3.1%	1.3%	1.2%	701	0.5%	0.2%
Italy-UK	0.0%	0	0.0%	0.0%	0.0%	0	0.0%	0.0%
Netherlands-Spain	4.3%	2,403	5.7%	0.8%	2.1%	390	0.9%	0.1%
Portugal-UK	2.3%	689	3.4%	0.3%	1.1%	115	0.6%	0.0%
Spain-UK	2.5%	4,189	3.6%	0.4%	1.2%	695	0.6%	0.1%
Rest of EU	4.0%	13,072	4.7%	1.6%	2.0%	2050	0.7%	0.1%
Sub Total of above		145,563	4.2%	1.3%		23,198	0.5%	0.2%
		Passengers not travelling				**Passengers not travelling**		
Sub Total		46,395	1.3%	0.4%		5915	0.2%	0.1%
		Total switching/not travelling				**Total switching/not travelling**		
Grand Total		**191,958**	**5.5%**	**1.7%**		**29,113**	**0.8%**	**0.3%**

Source: KPMG analysis

Note: Best case estimates assume a 50% pass-through between VAT costs and fares, a cross-elasticity of demand between air and rail of +30%, and between air and coach of +50%. The worst case estimates assume a 100% pass-through between VAT costs and fare, a cross-elasticity of demand between air and rail of +100%, and between air and coach of +150%

4.7.7 *VAT related distortions for overnight rail services*

Recall from Chapter 3 that the number of passengers open to competition in the air/overnight rail segment is estimated at 1.5 million, consisting of 0.2 million overnight rail passenger trips while the remainder is from scheduled air. Table 4.12 gives a brief summary of the distortions that arise under the existing VAT regime for a best and worst case scenario. The same assumptions with respect to pass-through of VAT costs to fares, proportion of VAT reclaimed, price-elasticity and cross-elasticity of demand as in the HSR analysis above have been used in this analysis.

Table 4.12: Best and worst case estimates of VAT-related distortions in the overnight rail segment.

	Worst case				**Best case**			
	VAT effective price distortion (% of rail price)	**No. of passen-gers**	**% of overnight rail traffic**	**% of overnight rail and air traffic**	**VAT effective price distortion (% of rail price)**	**No. of passen-gers**	**% of overnight rail traffic**	**% of overnight rail and air traffic**
Austria-France	3.2%	643	3.2%	1.5%	1.6%	96	0.5%	0.2%
Austria-Netherlands	4.0%	447	4.0%	1.5%	2.0%	67	0.6%	0.2%
Belgium-France	0.6%	62	0.6%	0.2%	0.3%	9	0.1%	0.0%
France-Germany	2.0%	181	2.0%	0.3%	1.0%	27	0.3%	0.0%
France-Italy	0.0%	0	0.0%	0.0%	0.0%	0	0.0%	0.0%
France-Netherlands	1.2%	142	1.2%	0.2%	0.6%	21	0.2%	0.0%
Germany-Italy	2.7%	741	2.7%	0.4%	1.4%	111	0.4%	0.1%
Germany-Sweden	3.9%	469	3.9%	0.8%	2.0%	70	0.6%	0.1%
Rest of EU	2.2%	1194	2.2%	0.3%	1.1%	179	0.3%	0.0%
Total (switching)	2.2%	3879	1.8%	0.3%	1.1%	582	0.3%	0.0%
		Passengers not travelling				**Passengers not travelling**		
Total (generated)		1164	0.5%	0.1%		194	0.1%	0.0%
		Total switching/not travelling				**Total switching/not travelling**		
Grand Total		**5043**	**2.3%**	**0.3%**		**776**	**0.4%**	**0.1%**

Source: KPMG analysis

Table 4.12 shows that in the current intra-EU overnight rail segment, the effect of the existing VAT induced distortions is between 776 and 5,043 fewer passengers in the segment. These figures representing between 0.4% and 2.3% of the overnight rail segment, but are less than 0.1% of the overall medium-distance intra-EU market.

4.8 **The impact of the regulation, externalities and other factors.**

This section builds on the analysis of the preceding section, by examining other factors which affect modal competition and market distortion. In this respect we examined the following :

- other non-VAT related distortions based on the advantages and disadvantages of particular modes, such as:
  - the regulatory environment and extent of subsidies;
  - externalities not fully reflected in the price charged to the consumer
  - other factors dependent on particular modal characteristics such as ticketing, employee efficiency etc;
- alternative business strategies where operators, instead of passing the VAT increase onto customers, modify their pricing structure; and
- the implications for the VAT induced distortions.

4.8.1 ***Distortions due to the regulatory environment***

There are a number of regulatory and other factors which will influence, albeit indirectly, the choice of transport mode (see Section 3.2 for a fuller discussion) and hence influence the level of distortion with respect to modal competition. Some of the most important factors are summarised below:

- the level of market regulations. Many Member States apply controls on the availability of scheduled coach services. This means that, all other things equal, coach travel is at a competitive disadvantage compared to other modes and that any VAT increase would produce a greater shift in demand away from coach than might otherwise have been the case. In addition, for all modes many Member States favour domestic operators over foreign operators in areas such as access to infrastructure etc. and using safety or technical rules to create barriers to entry for competitors;
- the extent of subsidies in the market. These are most significant in the rail market where many Member States use them to maintain essential services, to promote economic development in certain areas or to achieve a wider social objective. It is clear that much of the subsidies would continued to be paid by Member States even under a new VAT regime, thus creating an artificial advantage over other modes;
- the availability of infrastructure, illustrated in capacity problems such as congestion. This is most problematic in the air market where the lack of current capacity at many airports has meant that new entrant airlines cannot easily obtain departure slots. Furthermore, the signs are that these airports may also not be able to deliver this necessary capacity in the future. This will limit the extent to which air would be able to service increased demand as a result of any changes in rail and coach travel market such as VAT;
- non cost factors such as the opportunity to maintain work productivity. This means that certain slower modes have an enhanced competitive position such as rail compared to air;

- ticketing issues where the process is standardised for air travel, but not so for other modes. Thus air travel will have a competitive advantage over the other modes. This will be partially offset by the fact that coach and rail are more active in the provision of railcards, unlimited travel passes and discount travel and will therefore have an advantage in the (very) price sensitive leisure segment; and
- the extent of state ownership. These companies are unlikely to be able to reduce costs in the same way as private operators due to factors such as inflexible work force or more rigid investment criteria preventing cost savings through wage reductions and through the purchase of new capital equipment respectively. In these situations, the operator might pass on the VAT full levy to the customer in which case the distortive effect is more likely to occur than in the case where all the VAT is absorbed by the operator.

In addition, in a report by Cranfield University[118] the analysis of the disparity between air fares on similar length routes air market identified a number of other important factors. For example, cross-border fares were found to more expensive than those levied on domestic routes of similar distance (especially for fully flexible fares) even though deregulation and competition is greater in the international air market than in the domestic market. The explanations given for these findings are:

- regulatory control differs between the intra-EU and domestic markets. EU liberalisation has caused fares to fall in the intra-EU market whereas in the domestic market price controls has produced much lower fares as governments follow other social and regional economic objectives. Cross-subsidising has been a major part of this strategy. This is where an operator artificially lowers fares in the domestic market, with profits from international services. This can be observed in practice in the Italian market, where fare per kilometre is lower in the domestic market than in the international market, despite the domestic market attracting a 10% VAT levy. Furthermore, the condition for Air Inter, Alitalia and Iberia to retain monopoly status is that they operate loss-making domestic services;
- the effect of rail competition on domestic services. In France and Germany for example, some routes are highly efficient and act as a substitute for air travel. Furthermore, subsidies often mean rail has significantly lower fares. However, for intra-EU travel competition is much less due to the poor integration of national rail networks. Among one of the major exceptions is the London-Paris Channel Tunnel route where rail does have a significant impact on the level of passenger traffic; and
- carriers operating on intra-EU routes incur higher costs such as catering, airline lounge facilities and airport user charges which are generally much larger in the international market.

Finally, in March 1997, there was a re-introduction in the United States of a 10% federal levy on domestic journeys. However, as this is a sales tax it is applied directly to customers and does not enter the decision making process of operators. Although this tax does not currently apply to domestic legs of international journeys it may do so in the near future. The US congress is expected to reach a decision in late 1997 with regard to this issue.

[118] The Single Market Review, Subseries II: Impact on Services, Air Transport, 1997.

In this situation, EU operators will also be subject to the tax and issues of unequal enforcement which run parallel to those in the EU market may arise. At present, they do not as the sales tax applies to the domestic market only; a segment in which EU operators have only a marginal presence. This may change with the EU-US open skies agreement in the future

4.8.2 *Distortions due to the environmental externalities*

The size of the other distortions, particularly in the case of environmental externalities, are also quite significant. For example, it has been estimated that the external costs of land transport account for up to 5% of GDP (consisting mainly of air pollution 0.4%, noise 0.2%, accidents 1.5% and congestion 2.0%). Estimates suggest that 90% of these costs are related to road transport.

In the case of air transport, less information is known, but it is widely accepted that it is more environmentally damaging than rail and coach travel. It could also be argued that air transport has an competitive advantage over modes as the externalities are not reflected in either the price mechanism or the VAT system where air transport currently benefits from zero VAT rates in a number of Member States.

Those countering this argument tend to state these costs are fully addressed by other forms of taxation, such as fuel taxes, departure taxes (paid by customers), landing charges (in the form of fines for excess noise) and access costs paid by operators for core infrastructure such as airports and air traffic control. The impact of these charges, however, remains unclear. For example, most airports have noise limits (particularly near residential areas) which affects airlines' costs, as it takes longer to reach optimum cruising height, but a report by the OECD[119] concluded that the overall efficiency of these charges on the reduction of noise was low and that they did not influence the choice of aircraft. However, a report on the situation in Germany[120] suggested that some reductions in noise have been achieved. These issues have also been addressed in a recent report[121] which attempts to develop a coherent plan for airport charges within the EU to ensure the internalisation of all external costs, such as noise, pollution and congestion.

4.8.3 *The importance of other business strategies*

Taxation has an effect on fares with an increase in the rate of taxation accompanied by an increase in fares. However, the exact magnitude of any rise would be dependent on a number of other factors, most notably the level of competition and the extent to which other business strategies are followed. The following examples provide an illustration of how competition effects fares:

- fares on the Berlin-Frankfurt route are between 20% to 40%[122] (depending on ticket type) greater than on the Berlin-Munich route even though distances are approximately equal and both routes are subject to the same regime. The main reason for these differentials is the level of competition which is considerably higher on the Munich route where both Lufthansa and British Airways compete heavily.

[119] Source: Fighting noise in the 1990's, OECD, 1991.

[120] Source: External Benefits of Transport, ECOPLAN and T&E, 1993.

[121] Source: Consultation paper on airport charges, Directorate-General for Transport, 1996.

[122] Air fares quoted from Lufthansa.

- on the Brussels-Copenhagen route the entry of Virgin Express into the market caused fares to fall by up to two-thirds which is far in excess of any impact that the level of taxation is likely to have. These effects are likely to become more widespread as low-cost operators enter the market more frequently; the particular markets where this happens is described previously in detail in Chapter 3.
- leisure fares in real terms on the Berlin-Frankfurt route before German unification are approximately the same as fares (including VAT) after unification, whereas the business fares have increased by nearly 40%[123]. This is an important finding as, after unification, the journey was subject to a domestic VAT rate of 15%. Thus, to remain competitive, the full VAT rate has not been passed on to the customer but part absorbed by the operator and part passed onto the business traveller who is less price sensitive and has the opportunity to reclaim VAT.

The above examples show that the level of competition is clearly important in determining air fares with the level of fares varying by up to 40% according to the extent of competition on a particular route. Thus, the impact of VAT will be less important than competition and their will be considerable scope of operators use alternative strategies such as absorbing the VAT increase or changing fares in a particular sub-sector of the market rather than passing it onto consumers.

Implications for the VAT induced distortions

In terms of the implications of future developments, with respect to liberalisation and the regulatory environment on the VAT induced distortions, it is expected that the following are the most significant:

- regulatory bodies, at the both the regional and international level will continue to respond to concerns about the environmental by the further internalisation of external costs. Any resulted charges will be directed more at road uses with a resultant potential benefit for rail and coach travel as consumers shift away from the car.
- in the air market, the third package European liberalisation measures, is now more effectively impacting the industry; and
- in the rail sector the community's railway policy implies a gradual liberalisation.

The forecasts and the modelling exercise reflect as many of these characteristics of the transport market as possible. For example:

- a change in the regulation or the supply side characteristics of the market (determined by factors such as infrastructure availability, congestion etc.) is reflected in the high and low values of the own-price and cross-price elasticities used; and
- the extent of alternative business strategies is reflected in the differing pass through rates used;

To summarise, the impact of VAT is relatively less important than other issues such as the level of competition present in markets and the extent of regulatory control. In addition, there is the possibility of operators undertaking alternative business strategies instead of passing the VAT onto consumers.

[123] Source: Lufthansa.

4.9 **Conclusions**

Taxation, by leading to higher prices, leads to lower demand for trips; the extent of the reduction depends on how sensitive demand for trips is to price. Demand for business travel is less price-sensitive and, therefore, would fall less than leisure travel for any given increase in VAT.

The analysis in Chapter 3 has shown that different modes of passenger transport compete at different distances. In terms of the competitive impact of different VAT treatment of different modes, the preceding analysis has shown that it is possible to tax different modes differently without adverse competitive impacts as long as they do not compete in the same market.

Current domestic VAT systems

In the majority of Member States there is no VAT-induced distortion of competition between transport modes in the domestic market because the same VAT rate is applied to each.

Current intra-EU VAT systems

Six Member States (including Germany and France) have variations in the VAT rates between modes for intra-EU travel. The most significant distortion is between rail and air travel with higher VAT rates levied on domestic legs of international journeys by rail and coach than by air in five Member States.

The main justification for different VAT treatment for air and rail/coach for international journeys is the complexity of international passenger transport including the difficulties of applying any distance-based rules; in particular the risk of creating a competitive disadvantage for national airline operators *vis-à-vis* other EU and international operators. This was not expected to create any significant distortions as international rail journeys are a very small proportion of total, and air was considered to compete with rail/coach in a relatively small sub-segment of the market.

Business travel – deductibility of VAT

The imposition of VAT will not affect demand for business travel if the business is able to recover the VAT. The extent to which the imposition of VAT will affect demand for business travel is, therefore, dependent upon whether the VAT can be recovered by the business. Six Member States do not permit deduction of tax incurred on business travel. Even in those Member States where the tax is deductible in principle, many businesses do not do so because of the requirement to obtain documentation; which can be burdensome, or because their particular business activities do not give rise to a right to deduct VAT.

Variations in the rights of business travellers to reclaim VAT do not in themselves give rise to competitive distortions as the variation is between Member States rather than between modes. Variation in the *procedures* for reclaiming VAT also do not in themselves give rise to a distortion but will affect the overall impact of the distortion by discouraging business from reclaiming their VAT so that they in fact make their travel decisions on the basis of the full VAT-inclusive fares.

However, these variations have an impact on the number of travellers who are affected by any VAT-induced distortion and therefore the overall size of any mode-transfer that occurs.

In terms of the quantitative significance of the competitive distortions arising from the existence of different rules relating to the deductibility of input VAT, the analysis on the HSR routes suggests that even in the worst case scenario these are very modest. In view of the fact that the HSR segment covers the vast majority of journeys where business travellers have choice between alternative modes of transport (excluding the car), the results for the whole of the intra-EU business passenger transport segment will be bigger but of a very similar magnitude.

Distortions arising from the current VAT system

The analysis shows that the passenger transport segments, where there may be a competitive economic impact from VAT created distortions, are the HSR (*current* and *future* networks), overnight rail and long-distance leisure segments.

In the current intra-EU HSR segment, the central estimate could mean that the HSR segment might have around 19,125 (0.5% of current HSR traffic) fewer passengers as a result of the VAT difference. The high and low estimates range from 54,000 and 6,600 fewer passengers respectively. The exact figure depends on the extent to which VAT gets passed on to higher prices and the magnitude of the sensitivity of demand for air travel to changes in prices of rail travel. It is estimated that there are no distortions between HSR and coach travel.

By 2005, the estimates suggest that HSR might have anywhere between 36,203 and 295,900 fewer passengers if the existing VAT-induced distortion was not removed. This distortion represents up to 1.3% of HSR traffic, although the estimates are more modest in terms of the overall medium-distance intra-EU market (estimated to be around 55 million trips and growing to 91 million in 2005).

In addition, conventional rail also experiences distortions, particular with respect to overnight rail services. However this is a very small market and therefore, the magnitude of the distortion is very low, with at most only 5,000 fewer overnight rail passengers in the segment as a result of the VAT difference.

In the long-distance leisure segment the scale of the distortion is much greater since the segment is more price-sensitive and no passengers can reclaim VAT. Estimates suggest that in the current market, between 29,100 (0.8% of the rail/coach segment) and 192,000 (5.5% of the rail/coach segment) are currently not travelling in the rail/coach segment; these figures consist of passengers who have either diverted to air mode or who have decided not to travel.

Distortions arising from practical differences in the implementation of the VAT system

Many Member States do not implement the legislative provisions relating to passenger transport services carried out within domestic territory in a uniform manner. This results in distortions which, in general, impact unfairly on the domestic operators because the obligations of non-domestic transport operators are not being observed.

For journeys with a stop-over within a Member State of the EU the possibility arises of different VAT treatment between the operators of that Member State and other operators. These discrepancies have implications for the competitive position of different operators within the same mode.

In those countries where the positive VAT rate is applied in practice on the domestic leg of an air journey, demand for air passenger transport would favour a direct trip rather than a stop-over trip.

Also, where the domestic leg of an international air journey is not taxed in practice (e.g. France), an additional distortion is introduced between air and rail in the domestic market. This is likely to be occur where there is an important HSR network which competes with air. Obviously, such a distortion will become more significant as the HSR network develops in the future.

5 Options for change in the intra-EU passenger transport market: harmonised VAT rate/multi VAT rates

5.1 **Introduction**

The key findings emerging from the analysis so far and the following:

- the application of different levels of VAT across modes of transport causes competitive distortions ***only*** to the extent that different modes competing with each other are treated differently for VAT purposes. The segmentation of the EU passenger transport market has revealed that this is potentially the case in three sub-segments: the intra-EU medium-distance HSR segment (where air competes with HSR for leisure and business), the intra-EU medium-distance overnight rail segment (where air competes with rail for business) and the long-distance intra-EU segment (where air competes with rail and coach, mainly for leisure);
- the key VAT-related distortions under the present taxation system are created through positive VAT rates for intra-EU rail (and coach) journeys, in some Member States, compared with VAT exemptions for air. A quantitative assessment of the impact of this distortion in the medium-distance HSR segment revealed that it could be significant for HSR operators as around 1% of demand for HSR trips could be diverted to air[124]. The assessment also showed, however, that the distortion is relatively insignificant when compared to the overall size of the medium-distance market;
- the quantitative assessment of competitive distortions arising from different rules on the right of business travellers to reclaim VAT has revealed that any such impact is negligible (see Chapter 4); and
- intra-EU travel forms a substantial proportion of EU air operators' business. Intra-EU travel, on the other hand, represents a very small proportion of the rail operators' total turnover.

This section explores how each of the four, alternative taxation options would work in practice for *intra-EU travel only* under a harmonised and multi-VAT rate scenario. Domestic and international issues are discussed in Chapter 6. For each of these options, the discussion is organised as follows:

- first, a discussion of some general issues specific to the taxation option, but applicable to both the harmonised and multi-VAT rate scenario such as
  - definition options;
  - modal specific issues;
  - tax deduction issues for purchasers;
- second, an analysis of the effects of a positive VAT rate harmonised across the modes with respect to the:

[124] Recall that this is one of the two segments only and that the figures refer to an evaluation of distortions created solely as a result of different VAT treatment.

- practical impact;
- economic impact;
- fiscal impact;

- third, an analysis of the effects under the present, multi VAT rate arrangements with respect to the practical, economic and fiscal impact.

In determining the scope of any new taxation system for transport services supplied within the EU, it is important that operators and fiscal authorities have clear definitions within which to work. The following sections explore the various options available and build on many of the issues originally identified within the Council Directive Proposal COM (1992) 416 ("the 1992 Proposal"). These sections also recognise the contents of COM 328 (96), "A Common System of VAT – A programme for the Single Market" ("The 1996 Working Programme"), a document which outlines the Commission's plans for the future EU VAT system. Prior to the 1992 and 1996 documents, the Commission submitted or intended to submit to the Council a proposal for the VAT treatment of passenger transport (including international transport) for the second Directive of 1968 and the Sixth Directive of 1977.

First of all, however, some general issues are discussed about the overall effects of a new taxation system.

5.2 **Scope and basis of taxation**

The current taxation system enables a Member State to tax all passenger transport services carried out within its borders, but only to the extent of the distance physically travelled within those borders. This concept has led to the need for operators to segment their ticketing revenues and, in certain instances, to account for tax to a number of different fiscal authorities. Purchasers of travel services have as a consequence incurred a multi-jurisdiction VAT charge within a single ticket price.

Chapter 4 outlined the technical difficulties inherent within the current system. In summary, these included:

- different VAT treatment according to mode;
- inconsistent enforcement of VAT legislation according to origin of operator; and
- difficulties in securing a refund of VAT for business customers.

It is important that any new taxation system provides certainty, impacts fairly on all transport operators (irrespective of their origin), is easier for operators and purchasers in terms of compliance, and is efficient to administer for EU fiscal authorities. These aims are consistent with those set out within the 1992 and 1996 Documents.

The 1992 Proposal, which envisaged a move to a "place of departure" taxation system, anticipated that travel to or from a third country would not be taxed (save for certain journeys commencing or terminating within 30 kilometres of the external EU border). This represented a fundamental move away from the principle of taxation according to distance travelled and, in consequence, from the concept of segmentation of ticketing revenues for journeys which include more than one Member State.

The 1996 Working Programme envisages a move towards a "single place of taxation for operators" with businesses carrying out transactions within the EU being registered for

VAT in their "home" Member State. As a result, all transactions performed within the EU would be subject to VAT at the appropriate rate in force in the operator's home country; similarly, the operator would be entitled to deduct VAT incurred in its home and other Member States on its "domestic" VAT return. Such a system would, however, need to ensure that non-EU operators were brought within the scope of EU VAT (if performing taxable transactions within the EU) on the same basis as EU-domiciled operators.

5.3 **Place of taxation options: the departure option**

This section explores the impact of the departure option in, respectively, a harmonised and multi VAT rate scenario.

The section is organised as follows:

- first, a discussion of some general issues which apply to both the harmonised and multi-VAT rate scenario.
- second, a discussion of the impact under a
  - harmonised VAT rate scenario; and
  - multi-VAT rate scenario.

The departure option, in a harmonised VAT rate scenario, would mean that operators would be subject to a VAT charge, on ticketing revenue, for all domestic and intra-EU journeys.

Under the multi-VAT scenario, operators would be subject to a VAT charge, on ticketing revenue, for journeys which commenced in those Member States which currently apply a positive rate of VAT to passenger transport. Effectively, the VAT treatment of domestic passenger transport services (within a single Member State) would be unchanged. However, for journeys departing from a Member State which introduces a positive rate of VAT on domestic passenger transport, this option could result in a VAT charge falling due on the whole of that journey where the journey terminates in another Member State.

5.3.1 ***Definition options***

The departure point could be defined as the place where the principal service begins (excluding any "feeder" services which transport the traveller to the place of principal departure). This approach would be consistent with the place of departure definition contained within the 1992 Proposal. If it is decided to tax "intra-EU legs" of international journeys, the place of departure for inbound journeys could be defined as the external EU frontier.

In circumstances where operators issue "through" tickets (which involve the passenger travelling with a number of transport operators using a ticket issued by a single operator), one option would be to define the "place of departure" as the place of first departure (as shown on the traveller's ticket). This approach would apply irrespective of the fact that a number of different transport operators might be involved in the transportation of the passenger. This treatment would mirror industry practice and simplify tax accounting.

As far as non-EU operators providing passenger transport services within the EU are concerned, a mechanism will need to be put into place to ensure that such operators bring VAT due to account. In this context, operators could be required to appoint their

handling agent (or another intermediary) as their tax representative in each Member State from which their services depart.

5.3.1.1 *Documentation Issues*

Whichever definition is adopted, operators' accounting and ticketing systems will have to identify the place of departure for each journey. This will facilitate operator's VAT accounting, fiscal authority verification and input VAT deduction/refund for business customers. It is understood that, in general, operators' systems are geared to producing this information and showing the place of departure on the face of the traveller's ticket. The information on the traveller's ticket should, therefore, enable business customers to enter VAT deduction or refund claims with relative ease. Although operators' systems may not be able to itemise the VAT charge, separately, on the ticket, the detail shown should be sufficient for the purposes of the customers' VAT accounting.

5.3.1.2 *Return Journeys*

The 1992 Proposal considered the treatment of return journeys (where the traveller buys a single ticket, for a single price, for both the outbound and return leg of his trip). The Proposal concluded that such return journeys would generally be considered as two separate supplies.

Under the departure option, a VAT charge would arise in two separate Member States for every intra-EU journey. Operators would, therefore, be required to segment ticketing revenues for VAT accounting purposes; since the ticket would have been priced in a single currency, there would also be currency conversion issues to address. In addition, business customers would have incurred a VAT charge in two jurisdictions and might need to use the same document (the travel ticket) as evidence to support input VAT deduction in two different Member States.

5.3.1.3 *Round Trips*

Increasingly, transport operators are offering their customers the facility to travel on "round trips" on a single ticket (for a single price). For example, customers may make the following journey on a single ticket: London-Paris, Paris-Vienna, Vienna-Manchester.

The effect of treating each journey as a separate supply, under the departure option, would mean that operators would be required to segment ticketing revenues into three and account for local VAT in three Member States. Since business customers would have suffered a VAT charge in three jurisdictions, they may be faced with having to lodge an EU Eighth or Thirteenth Directive claim in each of these countries.

5.3.1.4 *Stopovers*

Stop overs occur most commonly in the airline sector but can also arise in the long distance sea and road markets. Typically, a passenger would purchase a single ticket at a fixed price, but the terms of the ticket would enable the traveller to "stopover" for one or more nights at an immediate destination. For example, flight from Lisbon to Helsinki may stopover in Frankfurt, enabling the traveller to break his journey there.

If both legs of the journey were treated as separate supplies for VAT purposes, under the departure option, the operator would again need to account for VAT in two Member

States out of the revenue earned from a single ticket. Further, EU Eighth and Thirteenth Directive claims would be made more difficult for purchasers of travel services.

5.3.2 ***Modal Specific Issues***

5.3.2.1 *Airlines*

It is understood that most, if not all, airlines which currently operate within the EU are registered for VAT purposes in those Member States from where they operate flights. Currently, because of the widespread exemptions extended to domestic, intra-EU and international passenger air transport, airlines enjoy a net refund of VAT paid on local expenditure.

Airline ticketing is standardised on a worldwide basis. A number of computerised databases are in use and, before a seat can be booked, a travel agent must access the appropriate reservation system to determine whether a seat on the desired flight is available. The standardisation of airline ticketing would enable VAT to be brought to account on those flights which are designated as liable to VAT. Flight tariffs are set by the airlines themselves and it should a relatively straightforward task for them to set VAT inclusive tariffs for those flights upon which VAT is chargeable.

There are, however, certain arrangements, common to the airline industry, which must be addressed before any new VAT system could be implemented. The main issues concern transferability of tickets, through ticketing, the treatment of transit and stopover passengers, the impact on the IATA clearing house system and, finally, the position of non-EU carriers.

The sophistication of the various computerised reservation systems within the airline industry enable tickets to be issued by agents anywhere in the world for any route in the world. Accordingly, it is possible for a traveller to purchase a ticket from Milan to Madrid at a travel agent's shop in New York. Further, the ticket can be issued in the name of the carrier which does not actually operate the route in question. In these circumstances, the responsibility for carrying the passenger will transfer to another operator.

Where the issuing carrier is not the uplifting carrier, a financial settlement will take place between the two airlines. However, the amount of the settlement will not always correspond with the original price of the ticket (billed to the traveller). All airlines have entered into bi-lateral agreements with each other and these agreements fix the level of remuneration in circumstances where the issuing carrier is not the uplifting carrier.

Similarly, in circumstances where a passenger purchases a through ticket for a single price but changes airlines en route, the settlement is also determined by agreement between the two airlines concerned.

Finally, customers may transfer from one flight to another without any adjustment in their ticket price. For example, a passenger who has bought a British Airways ticket from London to Brussels could arrange a transfer to Sabena for no additional consideration. Although the passenger may have paid £300 (UK Sterling) to British Airways, the amount British Airways pays Sebana in settlement could either be above or below this figure is totally dependent on the bi-lateral agreement between the parties.

Financial settlement of these transactions (known as "interline" transactions) is effected through the IATA clearing house system. The IATA system does not, however, store data; merely acts as a post-box, receiving and distributing invoices issued, usually on a monthly basis, by the participating airlines. Settlements via the IATA system have historically been on a tax exclusive basis since the clearing house procedures are not designed to cope with tax on the transactions which they process. However, it is understood that a number of airlines have unofficially agreed that charges for passenger taxes may be passed through the system.

To date, the airline industry has not defined clear rules for transit passengers. Because standard air tickets are generally valid for one year, it is possible that passengers may stop over, within an intermediate country, for a period of days, weeks or even months before continuing their journey to their ultimate destination. The airline industry does not, however, keep detailed records of stopover durations and, as a result, may find it difficult to begin to do so for VAT purposes. However, the experience of a major German airline suggests that breaks in journeys are becoming more widespread.

For VAT purposes, a structure which recognised the issuing airline as principal is likely to be workable (although this structure will not strictly mirror the contractual position which deems each uplifting carrier involved to be a separate principal). Subsequent settlement between uplifting airlines (involved at a later stage in the transportation in the passenger) could either be subject to VAT under the normal rules or, alternatively, the airline receiving the service could be permitted to account for the tax itself if it is VAT registered within the EU. However, this would be dependant on the retention of the "tax shift" mechanism within the provisions of the EU Sixth Directive.

Under the departure option, it is clear that there will be a distribution of taxation revenues across a range of Member States, particularly if return journeys, stopovers, round trips and, possibly, transit journeys are treated as separate supplies for VAT purposes. Further, the commercial nature of the airline industry (principally the "issuing airline" and "uplifting airline" arrangements), would also mean a more even distribution of taxation revenues across EU Member States.

However, the departure option, for airlines, could be difficult to implement in terms of the capability of the airlines' accounting and ticketing systems to segment VAT revenues, sometimes on a single ticket, across one or more EU Member States. Precise VAT accounting, in this context, is likely to be achievable only by use of the IATA clearing house system (through which financial settlement, between airlines, is made). VAT accounting as far as stopovers and transit passengers are concerned would be more difficult if those passengers did not change airline en route. In these circumstances, special accounting arrangements would need to be made which were possibly similar to those adopted by a major German airline for stopovers within Germany.

5.3.2.2 *Rail*

The sophistication of the COTIF system and the legal relationship between all of the European Railway Operators would, in theory, facilitate the adoption of the departure option in the rail industry. At present, a railway operator only acts as legal principal to the extent of the journey travelled within the territorial borders of its country. This arrangement applies irrespective of the length of the journey and the number of countries through which the train passes. On a journey on a single train through five Member States, therefore, the traveller technically contracts with five different railway operators

(with ticketing revenue re-patriated between the various operators involved through the COTIF system).

In the rail industry, one option would be to define the "place of departure" as the first point through which the train travelled in each EU Member State. This arrangement would mirror the contractual position and enable train operators to account for VAT relatively easily on their share of ticketing income. Because the railway track is a fixed feature, the intra-railway charge, under the COTIF system, is dependent upon kilometres travelled on railway track within each Member State. This enables a precise distribution of ticketing revenues amongst the operators involved.

However, a system under which the ticketing operator acted as principal for VAT purposes (for the whole of the journey) should also be workable. This arrangement would mean that VAT would be payable in the Member State of first departure (on the full ticket price) by the operator involved. Subsequent settlement between the other participating train operators, under the COTIF system, could either be dealt with by use of the "tax shift" mechanism or, alternatively, by a VAT charge at source. Under the second option, the ticketing operator would be required to lodge an EU Eighth Directive claim to recover the VAT paid to train operators in other Member States. It is understood that the COTIF system would facilitate either structure.

5.3.2.3 *Road*

Co-operative agreements and joint ventures and becoming increasingly commonplace within the EU, for coach and bus operators. A ticket for a journey across the EU would typically be sold as principal by the coach operator residing in the Member State of first departure (which, usually, is the country in which the ticket is sold). However, the return journey would typically be performed by a coach operator in the country of arrival of the outbound trip. Although the coach operators do not have a clearing house system like that of the airlines and railway operators, there is a mechanism (usually a "revenue sharing" agreement) which re-patriates the revenues between the participants concerned.

The contractual position usually involves the ticketing operator contracting with the customer as principal. Other coach operators involved in the transportation of the passenger typically contract with the ticketing operator and financial settlement between the operators is made directly (and not through any third party clearing house mechanism as noted above).

For major European operators (and routes), formal contractual agreements are in place between the operators participating in the co-operative arrangements and joint ventures. Under the departure option, the ticketing operator would be required to account for VAT at the rate in force in the country of first departure (which is usually the country in which the ticket is sold). However, if the return journey is to be treated as a separate supply, the ticketing operator would be required to register for VAT in that country. Since this operator is unlikely to be established in that country, an additional cost may arise for that operator by way of a requirement to appoint a fiscal representative to account for VAT on the operator's behalf.

For transactions between the ticketing operating and the sub-contracting operator, VAT could be brought to account (by the ticketing operator) under the "tax shift" mechanism or, alternatively a VAT charge could be made, at source, by the sub-contracting operator. In the latter case, the ticketing operator may be required to lodge an EU Eighth Directive

refund claim to recover the VAT paid, unless the ticketing operator is VAT registered in the country of the sub-contracting operator.

5.3.2.4 *Maritime*

The EU shipping and ferry industry issues "cumulative" tickets which enable the customer to stopover during the course of a particular journey for upto three nights. For example, for a journey from Dublin to Hamburg, the passenger may legitimately break his or his journey in Zebrugge for upto three nights.

Under the departure option, treating return tickets as a single supply could lead to a distortion in taxation revenue distribution. This is particularly so as far as cross-channel traffic is concerned since some 70% of cross-channel passengers originate in the UK. Treating return tickets as a single supply for VAT purposes, therefore, would lead to a distortion of taxation revenues between the UK and France.

The industry does not operate a standardised reservation or ticketing system nor a centralised clearing house. The industry, as a whole, is far less integrated than the rail and airline industries and route sharing arrangements are not common place. The departure option, within the maritime industry, would be relatively simple to implement, therefore, particularly since the ticketing operator is almost invariably the carrying operator. As such, there will be fewer inter-operator issues to address and VAT accounting should be far simpler as a result.

Further, the major EU shipping and ferry operators are generally VAT registered in all EU Member States to/from they operate services. This is to enable the operators to recover VAT paid on local expenditure and, in certain circumstances, to account for VAT on services provided in that Member State. The introduction of the departure option, therefore, should not add significantly to the EU ferry and shipping industry compliance costs.

5.3.3 ***Tax Deduction: purchasers***

If return journeys are treated as being supplied in the original country of departure, it is likely that a business traveller would be established in that country (since the travel ticket is likely to have been purchased in that country). In such circumstances, the cost of tax deduction (if the Member State in question permits tax deduction for business travel) is likely to be low. On the basis that the travel ticket serves as the evidence to support tax deduction (or refund), the additional cost would be negligible.

Where the traveller incurs a VAT charge outside his home Member State, the position may be more complicated. For business customers registered for VAT elsewhere in the EU, Eighth Directive Claims will need to be lodged (at least until the concept of "single place of taxation for operators" becomes reality). The customer will need to finance the cost of the VAT incurred until the refund claim is paid. Similarly, business customers based outside the EU will continue to have to lodge Thirteenth Directive refund claims (and, once again, finance the cost in the short to medium term). Overall, the departure option is likely to increase the incidence of EU Eighth Directive claims noticeably and the incidence of EU Thirteenth Directive claims significantly (in comparison with the present arrangements).

As detailed above, where a single document embraces a VAT charge in two Member States (but in a single currency), there will be important tax deduction (or refund) issues to address. Further, because of the ticketing arrangements which operate in the airline industry, a traveller's ticket may embrace supplies from more than one airline (if each individual carrier acts as principal for VAT purposes) and a VAT charge in more than one Member State. It should be noted overall, however, that it is estimated that no more than 50% of business customers actually lodge EU Eighth and Thirteenth Directive refund claims.

5.3.4 ***Harmonised VAT rate scenario***

This section explores the practical, economic and fiscal impacts of the departure option under a harmonised rate scenario.

5.3.4.1 *Practical example*

For a rail journey from Denmark to Austria, Danish VAT would apply to the full ticket price. Similarly, for a rail journey from Austria to Denmark, Austrian VAT would apply to the full ticket price. Where the traveller purchased a return ticket for a single price, the operator would need to apportion its ticket revenue and account for VAT in both Member States (on the basis that return journeys constituted separate supplies for VAT purposes).

5.3.4.2 *Economic impact and route specific examples*

To the extent that competitive distortions exist in the current transport market between modes due to different tax treatment, then harmonisation of rates will eliminate them. Equally, such a conclusion applies to different treatment of modes *between* countries. In the case where no distortions exist due to very limited or non-existent competition between modes and countries, harmonised rates will not introduce any new competitive distortions.

Harmonisation of VAT rates across modes *and countries* would remove also the potential problem associated with defining the place of departure for journeys with stopovers (or changes of operator or mode) as the same rate of VAT would be charged irrespective of whether the journey counts as one or two trips. The sections below presents some examples of this option and discusses the findings from the route and fiscal modelling. A more detailed analysis of the case studies and the fiscal impact modelling is presented in Appendix 5.1 and 5.3 respectively.

The ***London–Brussels*** route passes through Belgium, (potentially) France and the UK, and of these countries only Belgium charges a positive rate of VAT (6%) on rail and coach passenger transport for intra-EU travel. Under the current system, VAT is levied according to distance travelled resulting in an effective[125] rate of VAT on road and rail transport of 2%.

Harmonisation of VAT, which is assumed to occur at a rate of 8%[126], will therefore produce price rises for all modes of transport, accompanied by falling volumes of traffic. However, while all prices rise, the existing asymmetric treatment of different modes,

[125] The effective rate is the distance-weighted VAT rate.

[126] The effects are reported for other values of the harmonised VAT rate at the end of this chapter.

means that harmonisation produces changes in relative prices across the modes. This result is due to the fact that all operators now face cost increases. Air and sea operators face increases of 8% and rail and road operators face increases of 6%. As a result of these price rises, operators' costs increase, resulting in a fall in demand volumes of 2.5%. For specific modes, the relative price effects mean that rail and air increase their market share slightly at the expense of the other two modes. In terms of VAT revenues collected, as each fiscal authority is now collecting VAT from all the trips, revenues increase dramatically and are split two ways between Belgium and the UK.

To assess the true impact, the net gains/losses that arise are determined by subtracting the increase in VAT liabilities from any increase in gross turnover. Under a harmonised rate, the price increases are sufficient to generate additional gross turnover for the route as a whole, despite falling demand volumes. However, this increase in turnover is far from sufficient to outweigh the very large increase in VAT receipts generated under all the options and, taken together, the route operators incur net losses equivalent to around 5% of gross turnover, with all modes sharing this loss.

Further, although these losses are small in relation to total gross turnover, if it is assumed that profits account for 5–10% of gross turnover, such a loss begins to look much more significant.

For the ***Frankfurt–Amsterdam*** route, the effect of moving to the departure option with harmonised rates, is that rail travel increases its share by 1.6% at the expense of air. This is in contrast to the London–Brussels market where both modes increased their share at the expense of coach and road. As a result, the gross turnover on this route suffers by 2%, less than half the fall in the London–Brussels market.

Bringing these two examples together, the impact of harmonisation on the net losses (or gains) will depend on the distinguishing features of a particular route. In particular, the impact will be determined by four key factors. These are:

- starting rates of VAT. On the Frankfurt-Amsterdam route, rail/coach travel have rates of 15% and 6% for Germany and the Netherlands respectively and therefore the effective rate for the journey is 12%. Under a 8% harmonised rate, the effective VAT rate will fall causing lower fares and more demand for these modes. By contrast on the London-Brussels route, which has a 6% rate in Belgium and an effective rate of 2% for the journey, demand falls for rail and coach travel;
- the differences in VAT rates for rail/coach and air travel. This will affect the level of switching between modes;
- the business share. On the Frankfurt–Amsterdam route this is much lower and therefore the overall price sensitivity of the market is higher; and
- the level of competition between modes. In the London-Brussels market, HSR competes with air, but this does not exist currently on the Amsterdam-Frankfurt route which means there is greater degree of mode switching.

The above points are reinforced for other routes, namely ***Copenhagen-Gothenburg, Helsinki-Stockholm, Patras-Brindisi***. Currently all modes face zero rates of VAT and therefore, under a 8% harmonised VAT there are large increase in prices. Further, leisure travel dominates the markets which causes greater changes in demand for a given change in fares. A summary of the results is:

- a fall in demand ranging from 6.1% to 7.2% on each route; and

- a net loss of between 6.0% and 8.1% of gross turnover.

In addition, on the Frankfurt-Barcelona route the effects experienced are broadly similar since a vast proportion (over 95%) of passengers are leisure passengers. The magnitude of the changes is, however, slightly less since some of the competing modes (rail and coach) are currently taxed in both Spain and Germany.

For ***domestic*** routes, the effect of harmonisation will be determined by the difference between the current VAT rates and the harmonised rate. For example, Germany applies a rate of 15% on all (non-urban) passenger transport within its territory. Thus harmonisation at 8% will result in a fall in the burden of tax and hence an increase in demand for all modes. There may however, be changes in mode shares due to the different own-price elasticities involved (the fiscal impact of a harmonised VAT rate in the domestic market is presented in Appendix 6.1).

To summarise, the changes on demand volumes, shifts in market shares etc, are driven primarily by the initial taxation position of the modes and the choice of the harmonised rate, but they also depend on the particular characteristics of the route, such as:

- ***the level of competition;***
- ***the proportion of business travel; and***
- ***the eligibility of users to reclaim VAT.***

A further question is the treatment of EU and non-EU operators. For the purposes of our modelling, under the departure option we have assumed that non-EU operators would be required to collect and account for VAT. These issues related to the position of non-EU operators are covered in greater detail in Chapter 6.

5.3.4.3 *Fiscal impact*

This section provides a discussion of the fiscal impact, under a harmonised VAT rate scenario for intra-EU travel only. The analysis is presented in terms of key indicators such as demand volumes, gross turnover, VAT revenues collected and the net loss or gain experienced by the market. The model use the same methodology as the route case studies but deals with country to country movements and volumes instead. Thus, the issues and conclusions discussed in the above section also apply[127]. A total of 225 routes (15 routes from each of the EU Member States) have been examined. The estimates provided in this section are rough approximations of the size of the impact and should be treated as an indication of the effects in terms of "winners and losers" rather than in absolute figures.

Overall, the impact of a harmonised VAT rate of 8%, on each of the Member States is related to the level of turnover in their respective markets. It is also largely dependent on the size of the air sector which dominates passenger travel in the intra-EU market, accounting for a market share of 80% in volume terms and 92% in value terms. The effects are summarised below[128]:

[127] For example, the only difference between the UK-Belgium route and the London-Brussels route would be in the magnitude of market volume and value. Changes in air, rail and coach travel as a result of taxation changes would be identical in proportional terms.

[128] The methodology used in estimating these figures is given in Appendix 5.2 while a more detailed discussion of the fugues is presented in Appendix 5.3.

- an overall loss in passenger demand of 4.5% or 7.1 million trips, which ranges from 3.3% to 5.7% according to the Member States;
- an additional 2,990 million ECU, above the current 61 million ECU, of VAT revenues is raised by fiscal authorities; and
- a net loss of 5.7% of gross turnover, or 2.3 billion ECU, which ranges from 5.4% to 6.1% according to Member States.

Thus, the economic variables and fiscal revenues are broadly equal *in percentage terms* since the air sector (which dominates) experiences VAT rises from 0% to 8% irrespective of departure country. The marginal differences between Member States that do occur are explained by differences in the factors indicated in the route case study section above. These are the starting rates of VAT, changes in relative prices of modes, and the particular attributes of travel from Member States such as the amount of leisure travel.

Changes in relative prices will cause switching between modes. However, under the harmonised scenario, the magnitude of these changes is relatively insignificant in comparison to the overall situation (the rail and coach segment accounts for only 8% of the market in terms of gross turnover). The exact amount of mode switching is dependent on the current rate of VAT applied to rail and coach travel. In general terms the higher this current effective VAT rate faced by rail and coach operators, then the smaller the increase in their tax burden relative to air operators, and the greater the mode shift from air to rail and coach. Note that the demand for rail and coach travel may still fall if the increase in prices, as a result of an increase in the tax burden, outweighs the gain from the mode shift away from air travel.

Another factor which must be taken into account is the different attributes of routes. This can be best explained with reference to journeys departing from Spain and Greece which have a proportionately large leisure sector. These travellers are more price-sensitive than business travellers which means that overall fare increases will produce a greater fall in passenger demand. This factor forces the fall in passenger demand to the top end of the range; our estimates suggest that for journeys departing Spain and Greece the fall in demand is 5.5% and 5.7% respectively.

The combination of these effects is a reduction in passenger demand of 5.3%, 0.7% and 5.5% for air, rail and coach travel respectively with a fall of 4.5% for the whole market. As for the gross turnover of the market, even though the demand in volume terms has fallen, in the air and rail market, this is not sufficient to outweigh the effect of the price increase and market turnover increases. However, in the coach market the loss of passengers is greater, since coach travel is more price-sensitive, and gross market turnover falls very slightly.

Under the harmonised VAT rates scenario, as already indicated, for intra-EU travel only the amount of VAT revenues raised by fiscal authorities is 3,049 million ECU (an additional 2,990 million ECU). This is significantly greater than the current situation where the amount of revenues raised is relatively low, estimated at 0.1% of gross turnover or 61 million ECU since the rate is only applied to rail and coach travel. Most of this increase in VAT revenues collected is due to VAT on air travel increasing from 0% to 8%. The amount collected by rail and coach also increases since the effective VAT for

a majority of journeys increases as the 8% rate is now applied to the whole journey rather than only some countries applying VAT to part of a journey.

The fiscal authorities of France, Germany and the UK collect the most VAT, accounting for half of VAT revenues collected by EU Member States. This reflects the large air market for these countries. This amount of VAT collected by countries is roughly in proportion to the amount of departing/arriving air travel. France, Germany and the UK raise 51% (or 1534 million ECU) of total VAT revenues collected by EU Member States while accounting for 50% of the departure/arrival air travel market.

By comparing the increase in gross turnover with the increase in VAT revenues a measure of the change in market profitability can be derived. Overall, profitability falls by an amount equivalent to 5.7% of turnover. This is consistent across Member states, similar to other economic variables, with net losses ranging from 5.4% to 6.1%.

In summary, the fiscal impact, under a harmonised VAT rate, is determined almost entirely by the air market, with the rail and coach segments being relatively less significant. In the air sector, intra-EU passenger demand falls by 5.3% and market profitability by an amount equivalent to 5.9% of gross turnover. The fiscal authorities of the France, Germany and the UK collect half of all revenues.

5.3.5 ***Multi VAT rate scenario***

This section explores the practical, economic and fiscal impacts of the departure option under a multi-rate scenario.

5.3.5.1 *Practical example*

For a coach journey from Germany to Ireland, German VAT would apply to the full ticket price whereas, at present, German VAT applies only to the segment of the journey which takes place within German territory. Conversely, the return trip (from Ireland to Germany) would not attract a VAT charge (since Ireland, currently, does not apply a positive rate of VAT to domestic coach transport).

5.3.5.2 *Economic impact and route specific examples*

For intra-EU and international journeys, a move to a departure option, without any change in the level of VAT, would produce situations where the effective rate of VAT increased, impacting on costs, prices and demand volumes.

This is illustrated in the ***London-Brussels*** route where under the current system, VAT is paid on approximately one third of the journey, giving an effective rate of VAT of 2%. Under the departure option, any one way trip by rail or sea from Brussels would incur the full Belgian VAT rate of 6% on the price of the whole journey and the average price would rise. In addition, the increase in the effective VAT rate would put rail and coach operators at a further disadvantage compared to air and sea operators, if the latter remained exempt from VAT.

Conversely, if the departure point is London, the whole of London–Brussels trip, regardless of the mode, is taxed at zero so the price falls. Since the price rise for the Brussels–London leg is greater, the overall average price rises and demand volumes for the route fall by around 0.1%. It should be noted that competition is highest between air and rail on this route. In addition there is a change in the relative prices between modes, with air and sea operators benefiting as passengers switch to these modes from the more expensive modes.

Despite the small change in demand, VAT receipts increase by 45% as half of all rail and road journeys incur VAT at 6% whereas previously all these journeys incurred an effective rate of 2%. However, the magnitude of the overall effect is relatively small with a net loss in the market of 0.2% of gross turnover.

For ***domestic*** routes, the switch from the existing VAT regime to the departure option will not affect the market. There will be no change in the effective rate of VAT as the full VAT rate is already charged on the entire journey. This means that prices, demand, gross turnover and VAT receipts would all be unaffected.

5.3.5.3 *Fiscal impact*

Under the multi-VAT rate scenario, the fiscal impact of switching from the current distance based regime towards a departure option has only a small effect on the key statistics, since VAT in the air sector remains unchanged. Overall, fares for rail and coach travel are reduced under this regime resulting in:

- an increase in passenger demand by around 83,000 trips, an insignificant amount in terms of the whole market of 157.6 millions passenger trips.
- revenues from VAT to the fiscal authorities, who introduce a levy, more than doubles with an increase from 61 million ECU to 114 million, or around 0.3% of gross turnover.
- for the whole intra-EU segment, a net loss of 62 million ECU is experienced with the vast majority of the losses occurring in the rail market.

For the fiscal authorities of ***Austria, Belgium, Germany, Greece, Netherlands and Spain***, who currently apply VAT (of 10%, 6%, 15%, 8%, 6% and 7% respectively)[129] on rail and coach travel there are two main effects identified. Using Germany as the illustrative example, these are:

- for journeys originating from Germany there is generally an increase in the effective rate. For example, for rail or coach from ***Germany-Spain***, a 15% VAT rate would be levied by Germany on the proportion of the journey within its territory (i.e. approximately one third of the market). By contrast, under the departure options a 15% VAT rate is charged on departing trips only (i.e. one half of the market). Thus, the effective rate of tax obtained by the German fiscal authorities is greater; and
- rail and coach trips transiting Germany do not face a levy by the German fiscal authorities. This acts to decrease the amount of revenues collected by them and offsets the increases in VAT revenue described in the example above. Examples of such movements are rail or coach travel between Scandinavia and any of the other EU Member States.

However, while the German fiscal authorities loose revenues in the transit sector, the passengers themselves face a reduction in prices as the effective tax burden is reduced. This in fact occurs for all movements which transit Germany which currently has one of the highest VAT rates on transport (15%) of all Member States.

For the other countries with positive rates of VAT on rail/coach travel, there is a similar reduction in demand and a similar increase in revenues collected. However, the magnitude of the gains is much smaller due to the lower rates of VAT currently applied. For ***France*** only a very small proportion of rail and coach travel is subject to VAT (transit journeys and most international routes are exempt) which means that the amount of VAT revenues raised is considerable lower. It should also be noted that the French fiscal authorities do not loose revenues from the transit sector from the switch to the departure option as these journeys also faced zero (exempt) rates under the existing distance based option.

For countries which do have a large transit sector and apply a VAT rate under the current distance base option, such as Austria[130], a larger proportion of the net gain in VAT revenues collected is offset by the loss of revenues previously collected from the transit sector (though, in practice, VAT revenues derived from Austrian transits is declining - see Chapter 4).

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[129] In addition, France applies a VAT rate of 5.5% on a few non-transit intra-EU routes and Denmark a 25% VAT rate on tourist bus services.

[130] Germany and Scandinavia to Italy and Greece are particularly significant movements which transit Austria.

For fiscal authorities of the ***Denmark, Finland, Ireland, Italy, Luxembourg, Netherlands, Sweden and the UK,*** zero or exempt rates of VAT are applied therefore no VAT revenues or a negligible[131] amount are collected under the departure/arrival option, which is the same result as under the current regime.

However, there will be a small increase in demand as the effective VAT on certain journeys will fall. These journeys would involve three or more countries with a positive rate of VAT being incurred in one or more of the transit countries. The effective rate would therefore fall under the new regime as the transit country would now no longer be able to apply a VAT rate to transit travel. This effect would be greater for countries on the periphery of the EU, as travel to and from these places is more likely to involve transit via other positive VAT rated countries. For example passenger demand to/from Portugal (transiting through Spain with a 7% rate) on the periphery of the EU increases by 0.7% whereas passenger demand to/from France only rises by 0.4%.

The German fiscal authorities account for most of the revenues collected since Germany has one of the highest starting rate of VAT (15%) and one of the largest transport markets. A total of 59 million ECU, or 0.9% of gross turnover is collected in Germany which is much greater than the 39 million ECU raised under the current regime. In terms of the other variables gross turnover rises by 17 million ECU which produces a fall in passenger demand of 207,000 passengers, or 0.8% of the market.

To summarise, the fiscal impact of a switch to the departure or arrival options under the current regime produces a marginal increase in the overall level of demand, with a very small shift towards rail and coach travel. Total demand changes by less than 1% in all cases (except for Luxembourg) with market profitability (net losses) changing by even less. VAT revenues increase for all positively taxed Member States and passenger demand decreases for all zero (or exempt) VAT rated Member States.

[131] Denmark for example imposes a 25% rate on non-scheduled tourist services.

5.4 **Place of taxation options: the arrival option**

This section explores the impact of the arrival option in a harmonised and multi VAT rate scenario.

The adoption of the arrival option, in a harmonised VAT rate scenario, would result in a VAT charge falling due on all domestic and intra-EU journeys and, possibly, the EU legs of international journeys in the country of arrival. Similarly, all domestic journeys would attract a VAT charge (including journeys within Member States which do not, currently, apply a positive rate of VAT to passenger transport services).

The adoption of the arrival option, in a multi VAT rate scenario, would result in a VAT charge falling due on intra-EU journeys terminating in a Member State which currently apply a positive rate of VAT on domestic passenger transport. The VAT treatment of journeys made within a single Member State would not change.

5.4.1 ***Definition options***

The incidence of diverted journeys (caused by bad weather or other operational issues) within the airline and maritime industries means that the "place of arrival" could be defined as the place of planned arrival (as shown on the traveller's ticket). This approach should enable complications caused by diverted journeys to be avoided and for the VAT accounting to be simplified for the operators concerned. In practice, VAT would be chargeable, in the Member State in which the journey was scheduled to end (or the final Member State through which the journey passed before leaving EU territory if it is decided to tax EU legs of journeys to or from non-EU countries). The issues regarding return journeys, stopovers and round trips outlined within section 5.3 above will also be relevant under the arrival option.

As far as non-EU operators are concerned, the potential for distortions of competition will need to be avoided through the introduction of a mechanism which ensures that such operators bring VAT due to account. In respect of the arrival option, the comments at paragraph 5.3.1 above (for the departure option) are also relevant.

5.4.1.1 *Documentation Issues*

Whichever definition is adopted, operators will need to be able to identify, within their accounting and ticketing systems, the actual place of arrival for all journeys. Despite reasonably sophisticated accounting systems in the airline and rail industries, this may be more difficult to achieve than the departure option (though not as difficult as, say, the customer option). Fiscal authority audit assurance (and the issue of clear documentation for business users) may not be as straightforward, therefore.

Notwithstanding the above, most transport operators' ticketing systems are able to record the place of arrival on the traveller's ticket. This will facilitate VAT refund or deduction claims by business customers. Where operators' systems are unable to itemise the VAT charge separately, the detail shown should be sufficient for the purposes of the customer's VAT accounting.

5.4.2 ***Modal Specific Issues***

5.4.2.1 *Airlines*

Under the arrival option, the issues facing the airline industry are similar to those outlined under the departure option above. However, airlines typically operate "HUB" arrangements (for example, Laufhansa's hub is Frankfurt, KLM's hub is Amsterdam and Sabena's hub is Brussels). At these hubs, airlines operate full accounting functions; the hubs also represent the principal place of first departure of intra-EU flights for the airlines concerned. These "hubs" (which are invariably located in the country in which the airline is legally incorporated) enable the airlines to carry out their tax, regulatory and statutory financial reporting complications in these countries. Outside of these countries, the airlines, whilst typically operating a "branch structure", do not have the same operational capability. As such, the airlines will not be used to carrying out major tax accounting responsibilities outside their home country. Under the OECD double tax agreements, airlines are required to account for corporation taxes in their home Member State only.

The corollary to the above position is the fact that most, if not all, of the major scheduled airlines are VAT registered in the EU Member States to which they operate services. Under the arrival option, therefore, the additional cost of VAT accounting, at a positive rate, should not be particularly onerous. The position is less straightforward for charter operators, however, since it is understood that many are not VAT registered outside their home Member State. Instead, these operators typically engage local handling agents to supervise their affairs in the countries to which the airlines operate services.

Under the arrival option, therefore, there is likely to be an increased VAT accounting requirement (and cost) for scheduled and non-scheduled operators in comparison with the departure option.

5.4.2.2 *Rail*

Because of the nature of the European rail industry, rail operators are not currently established for VAT and statutory purposes outside their home Member State. Under the arrival option, there is likely to be a significant increase in the VAT accounting obligations placed upon national railway operators, if the operator issuing the ticket is required to act as principal for VAT purposes and to account for VAT in the country of final destination.

Under the COTIF system, however, it would be possible for operators to implement a structure, under the arrival option, which mirrors the current legal arrangements. Here, each individual operator would account for VAT upon the revenue it actually receives through the COTIF system (in respect of the distance travelled through the individual operator's home country). Under this structure, there would be successive places of arrival which would be defined as the external border of each individual Member State through which the train passes on its journey. This arrangement would facilitate VAT accounting for the individual operators concerned and would not disturb the current VAT accounting arrangements (which operate smoothly through the COTIF system). If this variation is adopted, there will be no requirement for VAT to be brought to account on charges made between individual operators through the COTIF system. Instead, individual operators would merely account for VAT on the ticketing revenue they received.

5.4.2.3 *Road*

Under the arrival option, the issues facing EU coach and bus operators will be similar to that outlined under the departure option above. It is clear, however, that the ticketing operators are unlikely to have an establishment in the country of arrival (since their normal place of business will almost invariably be in the country of departure). As such, there is likely to be an increased compliance burden placed upon these operators. However, under the joint venture and co-operative agreements the operators have entered into, it may be possible for ticketing operators to appoint the sub-contracting operators to act as the principal operator's fiscal representative in the Member State of arrival.

5.4.2.4 *Maritime*

Because of the nature of the EU shipping and ferry industry, the impact of the arrival option should not be significant and the issues involved should be little different to those outlined within the departure option section above. A relatively minor issue could surround the incidence of diverted traffic (due to bad weather). In this context, it should be a relatively simple task to define the "place of arrival" as the place of planned arrival (rather than the place of actual arrival).

As with the airline industry, however, the EU shipping and ferry operators do not typically operate a major accounting or administrative centre in the countries of arrival. Instead, these operators usually run a "branch" office in these countries. As such, the implementation of the arrival option could lead to slightly increased costs for this industry. However, these costs are not likely to be significant.

5.4.3 ***Tax deduction: purchasers***

The issues for business travellers are likely to be similar to those arising under the departure option. The incidence of EU Eighth Directive claims, in comparison with the departure option, is likely to be similar. The same analysis applies to EU Thirteenth Directive claims.

5.4.4 ***Harmonised VAT rate scenario***

This section explores the practical, economic and fiscal impacts of the arrival option under a harmonised rate scenario.

5.4.4.1 *Practical example*

For a journey by coach from Belgium to Finland, Finnish VAT would fall due on the whole of the ticket price. For a journey from Finland to Belgium, Belgian VAT would apply. For return journeys sold on a single ticket, operators would, as for the departure option, be required to issue documents showing two Member States' VAT and bring this tax to account in both countries.

5.4.4.2 *Economic and fiscal impact*

The issues arising under the arrival option are essentially the same as those discussed under the departure option; namely the implications of the exact definition of the place of

arrival and the competition between EU and non-EU operators. In economic terms, the departure and arrival options are virtually indistinguishable.

5.4.5 ***Multi VAT rate scenario***

This section explores the practical, economic and fiscal impacts of the arrival option under a multi-VAT rate scenario.

5.4.5.1 *Practical example*

For a journey by sea from Sweden to Denmark, no VAT would fall due since Denmark exempts all scheduled passenger transport services within its territory. However, for a journey in the opposite direction (one which commences in Denmark and terminates in Sweden), a Swedish VAT charge of 12% could apply to the whole of the journey.

5.4.5.2 *Economic and fiscal impact*

In economic and fiscal terms, the departure and arrival options are again virtually indistinguishable. The marginal differences that do occur while be on the fiscal side and will be dependent on the size of the market according to the direction of travel. However, in the absence of net migration from one country to another, most travellers will make a return journey, and the size of the market will be broadly similar in both directions.

5.5 **Place of taxation options: the operator option**

This section explores the impact of the Operator Option in, respectively, a harmonised and multi VAT rate scenario.

The operator option, in a harmonised VAT rate scenario, would result in a VAT charge in the country in which the operator is established for VAT purposes. For operators with no place of establishment within the EU, it is assumed that provisions would be introduced to ensure that these operators were brought within the scope of EU VAT as far as intra-EU travel is concerned to ensure that they did not enjoy a competitive advantage over EU-based operators. Unlike the departure and arrival options, the operator option would mean that individual legs of return journeys, sold on a single ticket for a single price, could not be subject to different VAT treatment.

The operator option, in a multi-VAT rate scenario, would trigger a VAT charge in circumstances where the operator was established in a Member State which applied a positive rate of VAT to domestic passenger transport. This option would also result in a VAT charge applying to domestic journeys in those Member States which currently do not currently tax passenger transport services, if the operator involved was established in a Member State which applied a positive VAT rate on such services.

Conversely, a journey would not attract a VAT charge if the transport operator was established in a Member State which did not apply a positive rate of VAT on passenger transport services. Under this scenario, a VAT charge, on domestic and intra-EU journeys, would only apply where the operator was established in a Member State which introduced a positive rate of VAT on passenger transport services.

5.5.1 ***Definition options***

The 6th Directive[132] defines the place of establishment of the supplier as *"the place where the supplier has established his business or has a fixed establishment from which the service is supplied or, in the absence of such a place of business or fixed establishment, the place where he has his permanent address or usually resides"*. If this option is adopted, it will be important that a clear definition of "place of establishment" is adopted. The current definition of Article 9(1) could lead to confusion amongst EU-based transport operators, particularly those with branch or representative offices in a number of Member States.

Where operators have a series of establishments across the EU, it is possible that, under a multi-VAT rate system, scope for tax avoidance would arise. Without clear definitions, operators could arrange their affairs so as to ensure that their place of taxation is their establishment which is sited in a Member State which either does not tax passenger transport services or which taxes it at the lowest rate of all the Member States in which the operator has establishments.

The simplest approach and one which would minimise scope for tax avoidance whilst, at the same time, minimising the burden on operators and fiscal authorities alike, would be the adoption of a single establishment as the place of taxation for the whole of an operator's economic activities.

There are a number of options for determining the operator's Member State of taxation including:

- the country of legal incorporation;
- the country in which the operator's transport licence is held;
- the country of principal accounting centre; or
- for non-EU operators, the country in which the operator's handling, travel or other agent is located.

Further, it is essential that the territorial scope of taxation is defined clearly as discussed earlier in the departure and arrival options. In short, arrangements must be made so that non-EU operators which provide transport services within the intra-EU market are brought within the scope of EU VAT otherwise distortion of competition will arise. This may be problematic as many do not have a branch, or representative offices, within the EU. In this situation operators could be required to appoint their handling agent as their tax representative.

In addition to defining the operator's place of establishment, it will be necessary to formulate a clear definition of which journeys are subject to EU VAT. EU operators would not be required to levy VAT on journeys which take place wholly outside EU territory but the taxation treatment of journeys which start or finish within the EU (having terminated or commenced in third countries) will need to be clear.

Under the operator option, the distinction between return journeys, stopovers, transit passengers and round trips will no longer be important since the operator will be accounting for VAT in its "home" Member State in all circumstances.

[132] Article 9(1): EU Sixth Directive.

5.5.1.1 *Documentation Issues*

Under the operator option, VAT accounting, in terms of ticketing and fiscal authority audit assurance, would be made far simpler. Operators would, however, need to be able to distinguish between routes which were and were not subject to VAT. It is understood that, in general, operators' systems are capable of this.

However, in terms of the VAT-related information which is capable of being shown on the traveller's ticket, it is not clear whether operators can easily indicate the country in which VAT will be chargeable. Major software changes may be necessary to facilitate this. Without the necessary information appearing on the travel ticket, customers' VAT accounting would be made more difficult.

5.5.2 ***Modal Specific Issues***

5.5.2.1 *Airlines*

The operator option would accord with place where the airlines are located both for statutory licensing and accounting purposes. This could either be the place where the operator is legally constituted or the place where it holds its aviation licence.

As far as the ticketing and reservation systems are concerned, however, the systems will need to be capable of holding specific information regarding the place of establishment of the airline as fixed data. This capability would be an absolute requirement given the nature of the worldwide airline industry and the fact that travellers may purchase tickets for any specific journey from any independent travel agent in the world.

Assuming this potential obstacle can be overcome, however, the operator option should be relatively simple to implement for airlines, particularly if the ticketing operator is considered to be acting as principal for VAT purposes. Subsequent settlements, between participating ("carrier") airlines would be subject to VAT (where appropriate) with the consideration for these inter-airline transactions being determined by the agreed settlements made via the IATA clearing house system. As outlined in the departure and arrival option sections above, VAT on these inter-airline settlements could either be charged at source (by the carrying airline) or could be subject to "tax shift" arrangements. In the former case, the incidence of EU Eighth and Thirteenth Directive refund claims, by ticketing airlines, is likely to increase (though by not as much as that which will occur under the departure and arrival options). Under "tax shift" arrangements, there is likely to be little or no additional Eighth or Thirteenth Directive VAT refund claims by the ticketing operators.

If, however, all of the "carrying" airlines involved in a particular journey are considered to be acting as principal for VAT purposes, the position is likely to be more complicated (but not significantly so). Under the IATA clearing house systems procedures, it should be a relatively straightforward task for individual airlines to account for VAT in the appropriate Member State on their "share" of the ticketing revenue due to them under the bi-lateral agreements they have entered into with other airlines (the consideration for which is settled via the IATA clearing house system).

5.5.2.2 *Rail*

The operator option, for the rail industry, will be relatively simple to implement, particularly if the ticketing operator acted as principal, for VAT purposes, for the whole of the journey. However, legally, this is not the correct position since operators only act as principal for the leg of the journey travelled within their home EU Member State. If the legal position is to be mirrored, therefore, each individual operator will need to account for VAT on the consideration receivable by it through the COTIF system. If this arrangement is adopted, it will be a simple task for operators to account for VAT, in their home Member State, under the operator option.

Where each individual operator accounts for VAT, as principal, on its share of the ticketing income, there would be no issues to address as far as transactions between participating operators are concerned. However, if the ticketing operator is to act as principal for VAT purposes, the issues of VAT accounting on inter-operator charges (as set out in the departure and arrival options above) will need to be considered.

5.5.2.3 *Road*

The operator option is likely to simplify VAT accounting obligations for EU coach and bus operators compared to the departure and arrival options. This arrangement would accord with the current arrangements the operators have in place for revenue sharing on intra-EU routes. For example, a UK-based operator acts as principal for a return journey from London to Madrid (although the return leg would actually be operated by a Spanish concern). Under these arrangements, the Spanish concern acts a sub-contractor (uplifting operator) to the principal contractor and the UK operator (the "issuing" or "ticketing" operator). In general, EU coach operators do not operate branch or representative offices outside their home Member State and, in the vast majority of cases, ticketing revenue is also earned in the operator's home Member State. Given these circumstances, implementation of the operator option, for the EU bus and coach industry, is unlikely to cause undue difficulties. Settlement for sub-contracted services could either be effected, for VAT purposes, through the operation of a "tax shift" mechanism or, alternatively, via a source VAT charge by the sub-contractor.

5.5.2.4 *Maritime*

The operator option is unlikely to present major difficulties to the EU shipping and ferry industry. Further, its implementation would facilitate VAT accounting as it would mirror the structure the transport operator has for statutory, financial and tax reporting. However, this option may lead to a distortion in revenues. As outlined within the departure and arrival options section above, some 70% of cross-channel passengers purchase their tickets from UK-based ferry operators. As such, it is likely that the VAT majority of taxation revenues for this major route would accrue to the UK authorities (at the expense of the French authorities).

5.5.3 ***Tax Deduction: purchasers***

The adoption of the operator option may give rise to distortions of competition (and of VAT revenues) under a multi VAT rate scenario. Because of the nature of the EU passenger transport industry, travellers can purchase tickets for any journey within the EU from any transport operator. Accordingly, the purchase of a travel ticket from an

operator based in a country which does not apply a positive rate of VAT on passenger transport could mean that the traveller (irrespective of status) would enjoy a reduced VAT charge. This "rate shopping" concept is likely to be exploited by business customers and private individuals alike as cross-border shopping (to take advantage of a wide differential in domestic VAT rates) has become common in areas adjoining the Denmark–Germany border (and certain other EU border areas) for many years. It is likely that the adoption of the operator option, in a multi VAT rate scenario, would give rise to similar distortions unless effective anti-avoidance provisions are introduced.

Overall, the operator option is likely to reduce the incidence of EU Eighth Directive refund claims (in comparison with the departure and arrival options) since business travellers purchasing their travel ticket from a transport operator residing in the same EU Member State are unlikely to incur significant amounts of overseas VAT on intra-EU passenger transport services. In this context, therefore, adoption of the operator option is likely to reduce the compliance costs for business travellers.

The incidence of EU Thirteenth Directive claims is likely to be higher in comparison to Eighth Directive claims but lower in comparison with the level of EU Thirteenth Directive claims under the departure and arrival options.

5.5.4 ***Harmonised VAT rate scenario***

This section explores the practical, economic and fiscal impacts of the operator option under a harmonised rate scenario.

Practical example

For a sea crossing from Greece to Italy operated by a Spanish ferry company, a Spanish VAT charge would apply to both the outbound and the return leg of the journey.

For sea crossings operated by non-EU providers (for example, by a ferry company based in Cyprus), an EU VAT charge would apply since the non-EU operator would be required to register and account for EU VAT. The VAT chargeable could be dependent, for example, upon the Member State in which the Cypriot operator retained a handling, shipping or travel agent. If the operator retained a handling agent in Greece, Greek VAT would apply with the Greek agent being directed, by the Greek fiscal authority, to account for the VAT payable on the ticketing revenues earned by the Cypriot operator for journeys carried out within the EU. In these circumstances, the Cypriot operator would be required to advise the Greek intermediary of the revenues earned from intra-EU journeys.

5.5.4.1 *Economic impact and route specific examples*

Under harmonised rates, the effective rate of VAT is likely to change but the direction of that change and thus the impact on prices, demand volumes etc. would depend on which country is under examination and what rate is chosen as the harmonised rate.

Under harmonised rates, the incentive for EU operators to relocate to zero or low rate VAT Member States disappears, as does the incentive to exploit cost advantages resulting from different VAT treatment. However, although EU transport operators from low rate countries will no longer face cost advantages over operators from high rate countries, advantages may exist for operators from other non-EU countries.

Generally, the economic effects of the operator option are equivalent to the departure/ arrival option with identical prices rises occurring under both options causing the same movements in demand, VAT revenues collected and market profitability.

The situation where these two taxation options differ is when non-EU operators are present in the market and are treated differently to EU transport operators for intra-EU and domestic travel. This issue is critical, as significant competitive advantage could arise were non-EU operators not to be brought within the scope of VAT. An example of this is the Italy to Greece passenger shipping lanes, where nearly 30% of operators are estimated to be non-EU registered. These issues are addressed with reference to the specific route of ***Patras-Brindisi*** described below.

For this route, where the non-EU sector is subject to the same regime as the EU sector, then VAT changes accompanied by fare changes cause a loss in demand of 8.0%, which is high in comparison to other routes due to the large price-sensitive leisure segment. Gross turnover in the total market falls by 0.4% and tax revenues collected increase by 10,097 ECU. This reinforces the losses and fall in profitability occurs of 8.6% gross turnover.

Although this analysis is helpful, it is possible that the non-EU sector will face a zero rate of VAT, through avoidance or if it is unequally applied. Even though this is the case for each taxation option, it is more problematic in the operator option. Against this background, two further scenarios have been analysed (a more detailed discussion between EU and non-EU operators is presented in Chapter 6):

- First, where competitive pressures prevail. In this situation EU operators are forced to absorb additional costs from the change in the VAT regime in order to remain competitive. Prices are equalised, demand and gross turnover remains unchanged but there is a net loss in market profitability of 5.9% of gross turnover; and
- Second, where a full price differential is maintained between EU and non-EU operators. For this scenario, prices on average increase by nearly 7% with a consequent loss of demand of just over 6%. As price rises and falling demand almost offset each other, only a slight reduction in gross turnover of 0.1% occurs. The result therefore, is a net loss in market profitability of 6.0% of gross turnover which is similar to the above situation.

In both of these cases, the loss in profitability is smaller than in the departure/arrival option, but very similar in *total* magnitude. The effects, however, experienced by the individual operators is quite different.

In the first case, the full amount of the VAT rise is absorbed by EU operators with prices and demand unchanged. By contrast in the second case, the full amount of the VAT rise is passed onto the customer which results in costs to existing customers in the form of price rises. These different methods of absorbing the VAT increase represent the upper and lower boundaries of the likely outcomes in the real world. In practice, EU operators may absorb some of the additional costs (it is unlikely that they could, and would want to, absorb the full amount) as well as being able to maintain some price differential against other operators due to reasons of non-price competitiveness, such as consumer loyalty or a higher quality of service.

The factors described under the departure/arrival option will determine the difference between the effects experienced in the example above and the other case studies. For example, the overall effect of a harmonised rate on the Helsinki-Stockholm route will be

less as more business travellers exist, and the potential shift between modes will be more as competition is greater.

The difference between the effects experienced in the example above and other case studies is due to the same factors described under the departure/arrival option. For example, the overall effect of a harmonised rate on the Helsinki-Stockholm route will be less as more business travellers exists and the potential shift between modes will be more as competition is greater.

To summarise,

- ***for routes consisting entirely of EU operators, the economic impact of a harmonised rate under the operator option will be identical to that under the departure/arrival options; and***
- ***for routes with non-EU operators present the impact of a harmonised rate on key economic variables such as demand, fares and profits will also be identical provided that the non-EU operators are treated consistently and brought within the scope of VAT.***

5.5.4.2 *Fiscal impact*

Under the operator option the total effect of harmonisation is identical to the departure/arrival options above. In addition, due to the dominance of the air sector, net losses[133] in percentage terms are again broadly consistent across countries. Net losses as a percentage of gross turnover range from 2.7% to 4.2% with Germany, Spain and the UK experiencing the greatest losses (details can be found in the Appendix).

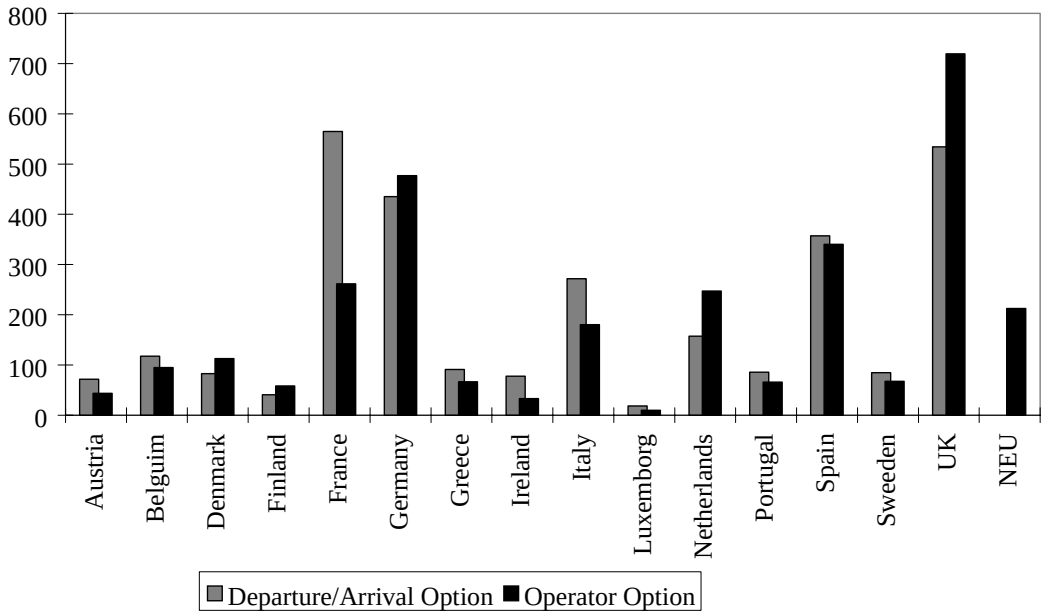
When analysing the amount of VAT paid by operators in comparison to the amount collected by fiscal authorities, significant differences begin to emerge. The most striking change occurs for France and the UK. Under the operator option, VAT revenues paid by UK operators are 719 million ECU while French operators only pay 261 million ECU. This is in contrast to the departure/arrival options where revenues collected by the UK and French fiscal authorities were approximately equal. The reason for this change, which is shown in Figure 5.1 for all EU15 countries, is the large market share that UK operators have in comparison to French operators, with for example:

- in the scheduled market, British Airways accounting for a 19% of the scheduled market while for Air France the share is only 10%; and
- in the charter market, more marked differences with UK operators having a 40% market share compared to less than 5% experienced for French operators.

To summarise, the introduction of a harmonised VAT rate under the operator option will adversely affect countries with airlines which command large market shares in the intra-EU market, in comparison to the departure/arrival options.

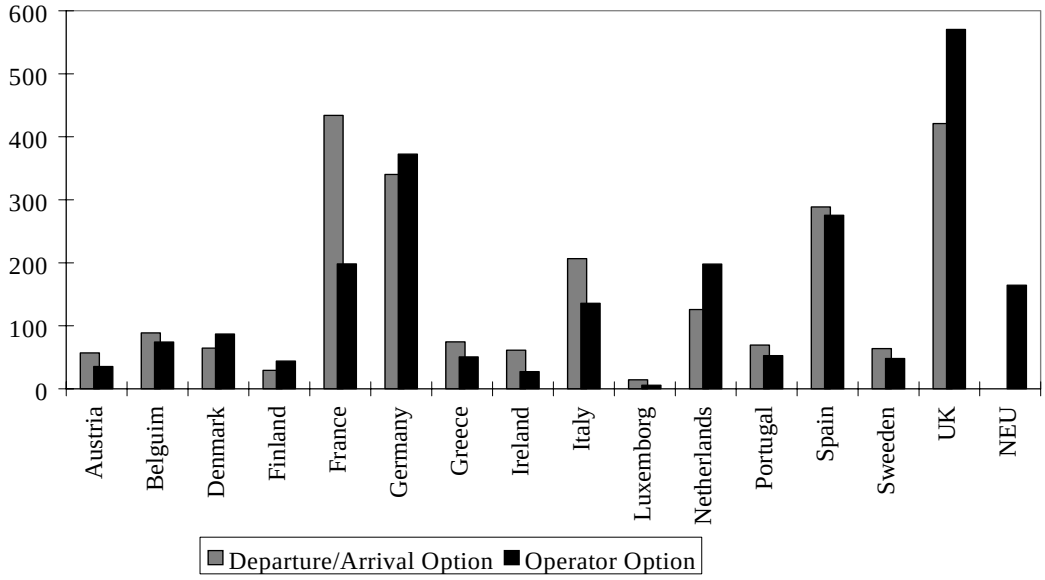
[133] Recall that net losses are defined as the difference between the change in fiscal revenue and the change in gross market turnover.

Figure 5.1 A comparison of options: revenue collected by fiscal authorities (departure/arrival option) and revenue paid by operators (operator option) - (1994 values, millions ECU)



In terms of net losses experienced by country and by operators, a similar picture arises which is shown in Figure 5.2.

Figure 5.2 A comparison options: net losses by country (departure/arrival option) and operator (operation option) - (1994 values, millions ECU)



5.5.5 ***Multi VAT rate scenario***

This section explores the practical, economic and fiscal impacts of the operator option under a multi rate scenario.

5.5.5.1 *Practical example*

At present, a flight from France to Greece is not subject to a VAT charge in either Member State. However, if the operator option was adopted in a multi VAT rate scenario, the same flight could attract a French VAT charge (at 5.5%) if performed by an airline established in France, or a Greek VAT charge (at 8%) if performed by an airline established in Greece. It would be VAT-free if performed by an airline established in the UK. Clearly, this could give rise to significant levels of distortion.

5.5.5.2 *Economic impact and route specific examples*

In the multi VAT rate scenario, there is the potential for the effective rate of VAT on passenger transport to change as operators of different nationalities would charge different rates of VAT in line with the existing different VAT regimes across EU Member States.

With existing VAT rates maintained, the operator option would be likely to give a cost advantage to operators based in Member States with zero, or very low rates of VAT. This could encourage low-cost air, coach and sea operators to enter markets to take advantage of their lower VAT costs. Depending on the market structure, this may put pressure on operators from countries with positive VAT rates to absorb the additional costs in order to compete in price terms with operators from low VAT countries thereby impacting profitability.

These issues can be best clarified with the aid of the ***Paris-Lyon*** domestic route case study although they equally apply to intra-EU travel. For this route, the market is unaffected by a switch from the current distance-based system to the operator option (identical to the departure/arrival option), since the full French rate is already charged on the entire journey and, at present, only French operators exist on the route. However, the operator option will provide incentives for operators from other Member States with lower rates of VAT to enter the market and take advantage of lower costs as a result of lower rates of VAT.

For example, one future possible scenario on this route is where UK operators enter the French domestic market. In this situation, UK operators would have a 5.5% cost advantage over their French competitors, which would mean, assuming that competitive pressures prevail, lower prices across the market. This fall in the price of rail and air transport results in an increase in total number of trips by 1.7% or 193,000 trips and, taking the changes in VAT revenues and gross turnover into account, profitability falls by 0.6% of turnover with all of these losses borne by incumbent French operators. A more detailed analysis is given in Appendix 5.

Direct entry into a given market may, however, be limited by the start-up costs that would be required; for example, an entrant would need to set up offices, a ticketing system, distribution networks, and invest a new rolling stock, aircraft or coaches etc. Unless confident of capturing a significant market share an operator may not be willing to undertake such a large scale investment. However, an alternative might be for an operator from a low VAT country to buy a significant share in companies based in high VAT countries and by changing ownership in this way, to reduce the VAT liabilities of the incumbent operators.

Operators in competitive markets and from high-VAT countries may be tempted to indulge in “rate shopping” by registering for VAT purposes in countries with low or zero rates of VAT. In the extreme case, the result of such rate shopping could be convergence on a harmonised zero rate of VAT in the EU passenger transport market. Aside from protecting their competitive position, rate shopping is unlikely to have any significant wider economic effects, e.g. on employment within the industry or its downstream suppliers. Indeed, the losers would be the fiscal authorities who currently levy VAT on passenger transport, while consumers could expect to gain from lower fares.

Overall, if the present variation of rates of VAT across the EU continues, those Member States applying low or zero-rates of VAT on transport services would be placed at an advantage over those with higher rates.

5.5.5.3 *Fiscal impact*

Under the operator option and assuming that a price differential is maintained between operators from different countries and that non-EU operators are subject to the same

regime as EU operators the overall effect is similar to the departure/arrival options and includes:

- a rise in demand of around 84,000 passenger trips, with a larger proportionate rise for rail and coach travel;
- an increase in VAT revenues paid by the operators of 54 million ECU; and
- a fall in market profitability with a net loss experienced of 58 million ECU with the rail market again taking most of the losses.

For ***Denmark, France, Italy, Luxembourg, Portugal, Sweden and the UK*** there are some differences, since operator shares by country differ from shares of passenger travel by country. In general however, these operators face significant reduction in their VAT liabilities as trips to, from and through positive VAT rated countries, which take up a large proportion of their business, are no longer subject to a VAT levy. This causes a reduction in the effective VAT rate, operators' fares fall and passenger demand rises.

Net losses again occur for countries with positive VAT rates such as ***Austria, Belgium, Germany, Greece, Netherlands and Spain***. These are caused by the increase in prices associated with a rise in the tax burden faced by operators from these countries.

In addition, for Germany and Spain, the VAT revenues paid by operators is nearly double the amount collected by the fiscal authorities under the departure/arrival option, explained by an increase in the effective VAT rate. Using the same example as above, trips to and from France by German operators now involve a 15% levy for the whole journey whereas previously only the proportion within Germany was subject to a charge. The same reasoning also applies to Spain. For other countries, there are some net gains in certain other countries, such as Sweden and Luxembourg, but these are insignificant.

The fiscal impact of a switch to the operator option under the current regime is similar in magnitude to the departure/arrival options. German operators pay 71 million ECU in the EU, a 27% increase over the amount collected by the German fiscal authorities under the departure/arrival options. French operators pay less VAT, as they can now provide services in positively taxed countries such as Germany or Spain without incurring a levy.

5.6 **Place of taxation options: the customer option**

This section explores the impact of the customer option in a harmonised and multi VAT rate scenario.

Under a harmonised VAT rate scenario, a VAT charge would fall due, in all circumstances, in the Member State of the customer. The taxation treatment of intra-EU passenger services provided to non-EU customers will need to be considered.

The adoption of the customer option, in a multi VAT rate scenario, would mean that a VAT charge would arise in circumstances where the customer was established in a Member State which currently applies a positive rate of VAT on passenger transport services. In circumstances where the customer was not established in the EU, consideration needs to be given to whether an alternative mechanism for bringing VAT to account would be required.

5.6.1 ***Definition options***

The 6th Directive[134] currently fixes the place of supply of intangible services, in certain circumstances, as the place of establishment of the customer. Such a place is defined as *"the place where the customer has established his business or has a fixed establishment to which the service is supplied or, in the absence of such a place, the place where he has his permanent address or usually resides"*.

In the context of passenger transport services, it may be possible to use a similar definition for the purposes of the customer option. However, as outlined above, there are a number of related issues which need to be considered.

Once again, it will be important that the scope of taxation be clearly defined to ensure that non-EU customers are subject to a VAT charge on journeys made within the EU and that both EU and non-EU operators are treated consistently in terms of the requirement to account for VAT due. In this context, it may be necessary for a secondary rule to apply to ensure that operators bring VAT to account on such journeys. A clear definition of which journeys are subject to EU VAT will also be required; in this context, the treatment of journeys to or from non-EU countries will need to be addressed.

Unless a common tax deduction system is adopted by the EU as a whole, the customer option could give rise to distortions of fiscal revenues since business customers established in a number of Member States might seek to bring the tax payable to account in those Member States which permit deduction of tax incurred on business travel.

5.6.1.1 *Documentation Issues*

In terms of the documentation of the VAT payable, it would appear unlikely that operators' ticketing and accounting systems could cope with the requirements. Fiscal Authority audit assurance would be made very difficult and the production of satisfactory documentary evidence for purchasers of travel services to use for VAT deduction or refund purposes may be impossible since it is understood that operators' ticketing

[134] Article 9(2)(e): EU Sixth Directive.

systems will be unable to record the customer's place of establishment on the face of the travel ticket.

5.6.2 ***Modal Specific Issues***

5.6.2.1 *Airlines*

Because of the nature of the ticketing arrangements in the airline industry (with a vast majority of tickets being sold by independent travel agents located anywhere in the world) it is likely that the adoption of the customer option will cause a number of difficulties. Beyond this, the increasing introduction of automated ticketing machines in this sector may also make it very difficult for the customer's status to be determined to the point of sale. In this context, the airline industry is slightly different from other passenger transport modes in that the airlines themselves rarely, if ever, deal with the sale of the ticket direct (employing, instead, a network of independent travel agents).

It is understood that the relationship between the airlines and the independent travel agents is often difficult and that the re-patriation of ticketing revenues and accurate ticketing information is often delayed (sometimes by weeks or months). The introduction of an additional requirement, placed upon independent agents, to determine and verify the customer's status is, it is understood, likely to cause further friction between the airlines and the agents. Further, it appears unlikely that the airlines will be able to exercise any control over the collection of this data by the independent agents. The scope for error in airlines' VAT accounting procedures is likely, therefore, to be increased significantly.

In terms of reservation and ticketing system capability, it is understood that the IATA ticketing format would not, at present, enable the airlines to capture the necessary customer information (apart from the customer's name) on the face on the ticket. As such, a number of systems changes will need to be implemented to enable the customer option to be adopted.

By the same token, inter-airline accounting, under the IATA system, would be made relatively simple (either under a VAT charge at source or "tax shift" structure).

5.6.2.2 *Rail*

Within the rail sector, the increasing incidence of automated ticketing machines is likely to make it very difficult to capture, accurately, the customer's status for sales made through these machines. Further, an additional requirement for booking office staff to capture and verify the customer's status, accurately, is likely to place an additional administrative burden on railway operators at the point of sale.

The railway industry also utilises the services of independent travel agents (albeit in a far more limited manner). As such, the potential compliance issues outlined within the airline section above are also likely to apply in the rail industry.

The COTIF system will not be able to be utilised to enable operators to account for VAT correctly (since no details of customers are held thereon). Inter-operator VAT accounting will be facilitated, however, (with VAT being payable in the country of the operator making payment through the COTIF system) if the "ticketing" operator acts as principal, for the whole journey, for VAT purposes.

5.6.2.3 *Road*

In the EU bus and coach industry, operators deal directly, on a more regular basis, with passengers as far as the ticketing arrangements are concerned. However, the accounting and ticketing systems are not automated and a requirement to verify the customer's status at the time of booking the ticket (or, in many cases, boarding the vehicle) is likely to place an additional, possibly considerable, burden upon the operators themselves.

For sub-contracted supplies between operators, the customer option would be relatively straightforward to implement provided it could be accompanied by "tax shift" arrangements, enabling the principal operator to account for VAT in his home EU Member State. If the sub-contracting operator is required to levy a VAT charge at source, however, there is likely to be an increased requirement for these operators to become VAT registered elsewhere in the EU. In both circumstances, there will be no increase in the instance of Eighth and Thirteenth Directive claims for "ticketing operators").

5.6.2.4 *Maritime*

Within the EU shipping and ferry industry, ticketing is generally organised by independent travel agents. As such, the potential issues outlined within the airlines section above are likely to apply to this sector.

However, EU ferry operators often contract with business customers. There customers are likely to be coach operators and, in these circumstances, the ferry operator would issue a single ticket to cover all of the passengers travelling on the coach. In these circumstances, it may be possible to implement a "tax shift" mechanism in a limited form.

5.6.3 ***Tax deduction: purchasers***

The customer option is likely to simplify the tax deduction mechanism for purchasers considerably (since the customer will always be incurring a VAT charge in his home Member State). The incidence of EU Eighth Directive claims is likely to diminish significantly, therefore. Similarly, the incidence of EU Thirteenth Directive claims, as far as passenger transport services are concerned, is likely to be reduced, almost to zero.

5.6.4 ***Harmonised VAT rate scenario***

This section explores the practical, economic and fiscal impacts of the customer option under a harmonised rate scenario.

5.6.4.1 *Practical example*

Under a harmonised VAT rate scenario, the scope for tax avoidance, as far as EU customers are concerned, would be limited since tax would be chargeable irrespective of the Member State of belonging of the customer.

5.6.4.2 *Economic impact*

The harmonisation of VAT rates has the effect of simplifying the economic issues that arise under the customer option. Harmonisation of VAT rates between Member States would mean that the issue of differential pricing arises only if non-EU passengers are exempt from paying VAT under this option. In addition for routes where the proportion of non-EU customers is negligible, the economic effects will be similar to the departure/arrival and operator options.

Recall that in the operator option, the market can impose a discipline on higher fare operators as passengers will switch to low-fare operators, so forcing prices to converge. Under the customer option however, no such competitive pressures exist as a passenger's nationality is clearly beyond his or her control.

The differential treatment of EU and non-EU operators remains an important issue and may have implications for competition if non-EU operators are treated in practice in a different way to EU operators, because of difficulties of properly accounting for the passengers of EU origin on intra-EU journeys by non-EU operators.

Therefore, under the customer option there are two effects contributing to make the impact of a harmonised VAT much smaller than under the departure/arrival and operator options. In particular:

- ***non-EU customers are likely to escape the tax as it will be very difficult to enforce the VAT rate for these passengers; and further***
- ***it may also be difficult to collect VAT from EU customers using non-EU operators***

5.6.4.3 *Fiscal impact*

The fiscal impact of harmonisation under the customer option is broadly similar to the operator option in terms of the direction of change for demand, gross turnover and profitability.

However the magnitude is less, since non-EU customers will be outside the scope of the VAT regime. The total reduction in demand is 6.7 million trips which is approximately 5% smaller than the effects experienced in the departure/arrival or operator options. A fuller discussion is presented in the Appendix.

5.6.5 ***Multi VAT rate scenario***

This section explores the practical, economic and fiscal impacts of the customer option under a multi rate scenario.

5.6.5.1 *Practical example*

Under a multi VAT rate scenario, a VAT charge would fall due in the Member State of the customer only if that Member State currently applies a VAT charge on passenger transport. Accordingly, it is conceivable that implementation of this option under a multi VAT rate scenario could lead to customers seeking to engineer the most efficient VAT treatment (particularly in circumstances where the customer is not entitled to full tax deduction or where the customer is identified for VAT purposes in a Member State which prevents deduction of tax incurred on passenger transport).

The distinction between return journeys, round trips, stopovers and transit passengers will not be important since the VAT charge will be determined by the customer's place of establishment.

5.6.5.2 *Economic impact and route specific examples*

Under the customer option with a multi VAT scenario, passengers from Member States which taxed passenger transport at the zero rate might expect to see fares fall and their purchasing power increase, the opposite holding true for passengers from countries with high rates of VAT. Furthermore, operators from countries with a positive VAT rate (e.g. German, Belgian rail operators) would in general be more negatively affected as they will be carrying a greater share of passengers from the same country.

Under the customer option, the revenue allocation will reflect the passenger mix of the passenger flows. For example on the ***Paris-Brussels*** route, it is assumed that Belgian passengers, for whom costs and prices would rise, account for one third of all passengers.

For the markets as a whole, however, prices are very slightly lower as all other passengers see prices fall, but the change in prices is insufficient to have any effect on demand volumes. The distribution of additional VAT revenues in this option depends on the nationality mix of passengers, so in principle all Member States would benefit.

5.6.5.3 *Fiscal impact*

Under the customer option the overall effect in terms of magnitude is slightly less than the departure/arrival and operator options, due to the size of the non-EU sector who face zero rates of VAT. At the country level the changes in the results can be attributed to how shares by nationality of customer differ from the operator and country of departure/arrival shares under the other options.

Again, Germany experiences the largest net fall in turnover because it has the largest customer base and applies the highest rate of VAT. A fuller discussion is presented in the Appendix.

5.7 **Level of a harmonised VAT rate**

How do total tax yields vary according to changes in the level of the harmonised VAT rate?

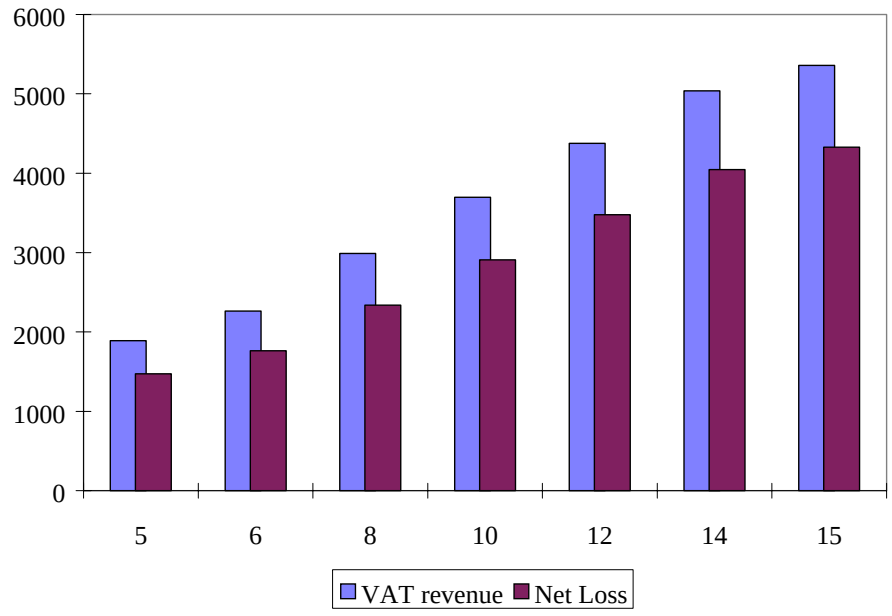
This section addresses the question of what is the appropriate level for a uniform VAT rate.

The effects of varying the rate of harmonisation between 5% and 15%, in terms of VAT revenues collected and net losses experienced in the market is summarised in Figure 5.3 using the departure/arrival options as an example. Similar results would be obtained in aggregate under the other options. These show that for any rise in the harmonised VAT rate, the profitability of the market suffers.

For a 5% harmonised rate, the revenue collected by the fiscal authorities is 1,890 million ECU with a net loss in the market of 1,473 million ECU. For a 15% harmonised rate, the revenue collected increases to 5,359 million ECU, with a net loss in the market of 4,328 million ECU.

Overall the relationship between VAT rate and profitability of the market is very constant and reflects the dominance of the air sector where uniform rate increases occur across all countries.

Figure 5.3: VAT revenue collected by fiscal authorities and net losses experienced in the market, under different harmonised VAT rates (millions ECU)



Source: KPMG analysis

5.8 **The impact of future regulatory developments in the European passenger market**

The estimates of the economic and fiscal impact under a harmonised or multi-VAT regime (and throughout this chapter) are for 1994. Since then, there has been a number of distinct changes in the EU transport market. These trends are expected to continue in the future, especially with respect to the regulatory environment. This section discusses the developments with related specifically to the intra-EU passenger transport market and the potential impact on our estimates of the economic and fiscal effects for each of the taxation options under harmonised and multi-VAT rate scenarios.

5.8.1 ***Regulatory developments***

Two regulatory developments are thought to be significant:

- first, the further liberalisation of the European air market; and
- second, changes in the regulatory environment, and to some extent liberalisation, in the rail market.

5.8.1.1 *Liberalisation in the air market*

The deregulation measures implemented are quite recent and their effects have been relatively small as the lack of capacity at many airports hindered the entry of new airlines. A few Member States have developed much more dynamic regulatory regimes and pursued privatisation programmes which have increased their competitive advantages of their operators. Over the next few years, the effects of deregulation in the sector will become more apparent. In particular, the implications of the further liberalisation of the air market are the following:

- the continued liberalisation of air travel will lead to faster growth, further increasing the fiscal revenues accruing to the authorities, following the introduction of a harmonised VAT rate;
- liberalisation will also increase competition and will reduce the ability of airlines to absorb the introduction of a new tax; a greater percentage of any given VAT will therefore get passed on to the customers. Competition will be further enhanced as the privatisation of those airlines still in state ownership continues; and
- increased competition will force further consolidation within the industry in order than airlines will remain competitive both within and outside the EU. This will be focused on the big players forming international alliances. Conversely, the number of smaller operators may increase as the niche point to point market increases.
- increased inter-modal competition on *all* intra-EU routes, will imply that the routes where there is competition with HSR will become more important for the airlines; any distortions created through the VAT system will therefore be also more important in routes.

Finally, a possible threat to airlines growth in the future could be high speed trains. The evidence is that the traffic diversion although measurable is quite small in relation to the overall scale of the air market. A differing view is that high speed rail services are

complementary and could actually play a role for the airline industry by providing inter-modal access facilities; a number of airports are currently examining the possibility of providing access to HSR networks.

5.8.1.2 *Changes to the regulatory environment in the rail market*

Liberalisation of the EU rail market, albeit more gradually, is also a policy aim of the EU. Under this situation, operators would become more sensitive to market forces and likely to adjust their services and hence infrastructure accordingly. The EU Transport Ministers developed guidelines in 1991 to improve the efficiency of railways and to encourage their adaptation to market conditions. The key objectives were to:

- ensure management independence of railways;
- separate rail track operation from the delivery of rail services;
- improve the financial situation of the national railways; and
- provide access to the railway infrastructure.

Progress has been made in all Member States towards meeting these objectives, especially management independence and separation, whereas problems have been created in the provision of access rights to infrastructure.

The separation of rail track operation from service provision will lead to increased competition for the acquisition of licences to offer rail services. Airline operators could therefore obtain licences to offer rail services, thus reducing competition in routes with HSR links.[135] This would reduce any competitive implications of different VAT treatment of air and rail operators.

The separation of rail track operation from the provision of rail services will also imply that it will not be possible to use any subsidies for rail track operation for service provision and vice versa. Any VAT induced distortions for the provision of rail passenger transport services will therefore become more significant.

5.8.2 ***Quantification of the future developments***

5.8.2.1 *Departure/arrival option*

Since 1994, there has been a steady growth in the passenger transport market. The main driver of this growth is the increase in the air market which dominates intra-EU travel, with increase of around 8% per annum while for rail/coach travel growth is much less at around 1%[136]. As a result, under a harmonised VAT, rate VAT revenues will, in total, be approximately 20% higher for 1997, although there may be some differences at the country level.

Taking into account the factors in the above section, these trends are expected to continue, albeit with slightly lower growth rate of 5% for air travel as the market matures and a higher growth of 3% for rail travel (see Table 2.1) due to the introduction of HSR.

[135] For example, Virgin, of the UK, participates in the consortium offering channel tunnel HSR services and also offers air passenger transport services between London and Brussels.

[136] Panorama of EU Industry 1997.

Therefore, the total amount of VAT revenues collected is expected to increase by around 5% per annum in the future.

Under the multi-VAT rate scenario, the magnitude of the fiscal impact of switching from the current distance based regime towards any of the taxation options is small. The magnitude of our estimates are therefore unlikely to be affected by the growth or change in the market to any significant amount in comparison to the total market. VAT revenues still expected to increase by 20% by 1997 and 5% per annum thereafter.

5.8.2.2 *Operator option*

Under the operator option, VAT revenues will be 20% higher by 1997 and grow at a rate of around 5% per annum in the future for the same reasons identified in the above section.

Liberalisation and deregulation of the air market has caused a gradual decline in the dominance of flag carriers since 1994 (see Chapter 2) as other carriers, both large and small, enter the market. To date, most of these new entrants have been European.

Thus, under a harmonised VAT rate scenario, total tax revenue collected will not be significantly affected as European operators all face 8% VAT increases There may, however, be some distinct changes at the country level. For example, a majority of low-cost entrants are from the UK and Ireland and thus, the share of intra-EU market for these countries will rise resulting in increases in the size of their tax burden.

Under a multi-VAT rate scenario, service providers from countries with 0% VAT rate will be able to bid to offer services in EU Member States with positive (or higher) VAT rates, taking advantage of the VAT discrepancy to make more competitive bids. This would affect especially Germany and Austria, which levy the highest VAT rates on rail. This would be true for both intra-EU *and* domestic rail travel.

5.9 **Conclusions**

The key findings are as follows:

Current regime

- in the intra-EU market, estimates suggest that 61 million ECU in VAT revenues, a small proportion of gross turnover, is collected by the European fiscal authorities. All of this revenue is collected in the rail and coach market, as air and sea travel is zero-rated, and a vast majority by the German authorities.

Harmonised VAT rates

- the conclusion is that with harmonised VAT rates, many of the competitive effects and practical difficulties outlined above disappear since existing distortions between modes are removed. Harmonisation also has the effect of removing the scope from one Member State to gain at the expense of another as a result of imposing a low VAT rate;
- the impact of harmonising VAT rates on demand volumes and gross turnover will clearly depend on the rate chosen and its effect will vary according to the market under consideration. Where the existing rate is lower than the rate chosen then the impact on the transport markets is likely to be negative since this will result in rising

costs and prices, whereas the opposite effect will occur for Member States with an existing rate higher than the chosen rate;

- in terms of the effects on the particular modes, demand will fall by the largest amount in the sea and air markets where a zero rate of VAT is currently imposed. Furthermore, sea will be affected to a larger extent as it is predominately leisure travel, which is more sensitive to price changes;
- for countries with a high initial rate of VAT on rail and coach travel, harmonisation will have the impact of increasing the competitiveness of rail travel. In terms of particular routes, the medium distance HSR segment will be most affected with mode shifts towards rail occurring. The other medium distance segment will be affected, but due to smaller amount of competition between modes, the amount of shift will be considerably lower; and
- the impact of harmonisation will be determined predominately by the air sector, which has a market share that dominates other modes of travel. Under harmonised rates, consistent rises in air fares will occur across the market, since the current rate of VAT in EU15 for air travel is 0%. Furthermore, as air travel dominates other modes, the overall market will suffer a fall in passenger demand while revenues collected by fiscal authorities increase.

Under each of the taxation options, the effect of harmonisation with a uniformed rate of 8% impacts most on the air sector which accounts for 92% of the market in value terms. Furthermore, since VAT increases in the air sector, will occur for all Member States, the effects at the country level are broadly similar in percentage terms.

- in terms of the wider economic effects of a uniform 8% rate, an overall loss of 2.8 million passengers occurs in the air/rail/coach segment and an extra 3,021 million ECU is collected by the EU fiscal authorities. In terms of profitability, the market experiences a loss of 1,546 million ECU or 5.7% of gross turnover. The net loss in profitability of the sector is proportional to increases in VAT rates, a conclusion which results from the dominance of the air sector which experiences uniform increases in VAT in all Member States; and
- for certain Member States, the magnitude of changes is vastly different under the departure or arrival options on the one hand and the operator option on the other. For example, under the departure or arrival option, the UK fiscal authorities would collect 534 million ECU, while under the operator option UK operators face a greater VAT charge of 719 million ECU.

Multi-VAT rates

- for a lower harmonised VAT rate of 5%, revenues collected by the fiscal authorities in the intra-EU market are reduced to 1,890 million ECU and the market experiences a net loss of 1,473 million ECU. For a higher rate of 15%, the revenues collected increase to 5,359 million ECU with a net loss of 4,328 million ECU. Overall the relationship between VAT rate and profitability of the market is very constant and reflects the dominance of the air sector where uniform rate increases across all countries occurs.
- for intra-EU travel involving Member States with a positive rate of VAT on some, but not all, modes, the departure and arrival options could have the effect of increasing existing distortions by raising the effective rate of VAT rate paid by the taxed modes;

- the operator option provides a potential incentive for operators from Member States where VAT on passenger transport services is levied at a reduced or zero-rate to enter the markets where operators from Member States with high VAT rates currently provide transport services in order to exploit cost advantages arising from the different VAT regimes. Non-EU operators may also seek to base themselves in low rate or zero-rated Member States to exploit this distortion;
- the customer option is likely to have a similar impact (but smaller in magnitude) in terms of competition as the operator option, as operators from countries with a positive VAT rate will be carrying relatively more passengers from that country;
- in terms of wider economic effects, these are driven by price changes that arise from changes in VAT costs. Given the size of the price changes under consideration, the effects on any given transport market are likely to be relatively small. There is also an effect on the allocation of fiscal revenues with the distribution of revenues varying according to the option chosen. In practical terms, the customer option could be extremely difficult to apply;
- overall, the fiscal impact of a switch to the different taxation options under the current VAT regime is negligible, with only a loss of 0.2% of gross turnover experienced by the total intra-EU market; and

As a general conclusion, it appears that harmonising VAT rates across modes and countries at a positive rate in line with current VAT rates is likely to have larger economic effect than moving to the alternative taxation options under existing rates. This is because, in the case of harmonisation, all operators would have to levy VAT rather than just some as is presently the case. This, in turn, would lead to bigger changes in costs and prices and bigger effects on demand volumes.

In terms of the practical administration of the options (for transport operators and fiscal authorities alike), the adoption of the departure, arrival and operator options should not have a significant impact. The customer option would be very difficult to implement, however, and the requirement for operators to verify the customer's status could have serious consequences as far as the free movement of persons within the external EU frontiers is concerned. Whichever scenario is adopted, it is clear that effective provisions will need to be introduced to ensure that non-EU operators are brought within the scope of the tax. Further, EU fiscal authorities must ensure that non-EU operators are subjected to the same levels of control as EU-based operators.

The scope of the VAT charge will also need to be defined clearly. A requirement for operators to account for VAT on intra-EU legs of journeys to/from non-EU countries (or on journeys which merely transit EU territory) is likely to bring many more operators into the scope of a VAT charge. The cost of operator compliance (and fiscal authority administration) is not likely to justify the tax revenue which would fall payable if such journeys were taxed.

6 EU-third country and domestic passenger transport markets.

6.1 **Introduction**

The aim of this section is to provide an assessment of the extent to which a policy of a harmonised VAT rate would damage the EU transport industry, EU airline and maritime operators, with regard to third country operators. An assessment of the appropriate level of a harmonised rate is also provided in this chapter. The section is organised as follows:

- first, a summary of the scope and basis of VAT for EU-third country travel;
  - highlighting the distortions present in the existing regime;
  - providing a description of any problems of implementation that may occur if VAT was applied to this type of travel; and
  - outlining a presentation of a methodology for applying VAT within this market
- second, where a positive VAT rate is applied to intra-EU leg of a journey, demand for air passenger transport would favour a direct trip rather than a stopover trip. This analysis presents findings for all EU-third country travel by building upon the case study of the Frankfurt-New York route modelling which is presented in the Appendix.
- third, an analysis of the competitive position of EU operators *vis-à-vis* non-EU operators in both the third county-EU and intra-EU markets; specifically, the extent to which there may be a switch to non-EU operators if a positive rate was introduced but was unequally enforced between EU operators and non-EU operators (which is a possibility, as the German experience of the application of the VAT charge on certain domestic legs of international and intra-EU air journeys suggests).
- fourth, an analysis of the effect of harmonising VAT rates at 8% within domestic markets.

6.2 **Scope and basis of taxation**

6.2.1 ***EU and non-EU operators***

Under the current regime, Member States generally apply a zero rate of VAT on international air transport, while at the same time maintaining a positive VAT rate on rail/coach. The justification for this different VAT treatment is the complexity of international air passenger transport in terms of the potential competition of any number of operators from different countries on any route. Under a harmonised rate, this implies a real risk of creating competitive disadvantages for national airline operators vis-à-vis other EU and international operators.

It is important also that EU and non-EU based operators providing passenger transport within the EU are subject to the same rules and are treated consistently for VAT purposes. Failure to do so could cause competitive distortions and place EU-based operators at a commercial disadvantage.

The VAT audit of non-EU operators is likely to be problematic if for no other reason than the principal accounting centre may be located outside the EU. As indicated above, it is in the interest of both Member State authorities and EU-based operators to ensure that an effective and practical mechanism of taxation is established and applied so that no distortions of competition arise.

6.2.2 *EU- third country market*

In the third country-EU market, the major problem of a harmonised VAT rate is, when a positive VAT rate is *only* applied to intra-EU leg of a journey, demand for air passenger transport would favour a direct trip (e.g. Frankfurt–New York) rather than a stopover trip (e.g. Frankfurt–Other EU–New York). This is illustrated with an analogy to the current situation where a positive rate of VAT is applied only on the domestic leg of an intra-EU trip resulting in a shift towards direct trips. Data for Germany shows the significance of this distortion, where some 5% of international flights, including intra-EU, originating in Germany[137] are broken by a domestic stopover.

In contrast, in the intra-EU market, harmonisation of VAT rates across modes *and countries* would have the benefit of removing this potential problem associated with defining the place of departure for journeys with stopovers (or changes of operator or mode) as the same rate of VAT would be charged irrespective of whether the journey counts as one or two trips.

It will be necessary to formulate a clear definition of which journeys are subject to EU VAT. EU operators would not be required to levy VAT on journeys which take place wholly outside EU territory but the taxation treatment of journeys which start or finish within the EU (having terminated or commenced in third countries) will need to be clear.

A "hybrid" taxation system could be introduced where tax is applied to the element of the journey within EU territory. This means that the current distance based system would be applied to EU-third country travel (to enable the apportionment of ticketing revenues) while one of the taxation options (departure/arrival, operator or customer) would be applied to intra-EU travel. Under this system, the problems of diversion between direct and indirect services would be limited and many more non-EU operators would be likely to be brought within the scope of EU VAT.

However, even though taxing intra-EU legs of international journeys at a positive rate remains an option under each of the alternative proposals for passenger transport taxation, the effect of so doing may be to transport many of the burdensome aspects of the current taxation system to the revised structure.

6.2.3 *Transit journeys*

The current taxation system also obliges Member States to tax journeys which cross its territory. However, those Member States which exempted such services as at 1 January 1991 may continue to do so until the end of the transitional period[138]. Such taxation is generally restricted to land-based transits. If, under the new taxation system (particularly one involving a uniform, positive rate), transits remain subject to EU taxation, many

[137] Source: German airline industry.

[138] Article 28(2): EU Sixth Directive

operators (principally airlines) which do not currently provide services to, from or within the EU would technically be brought within the scope of EU VAT.

In summary, the taxation of intra-EU legs (or transits) of international passenger transport is likely to increase the compliance burden of operators significantly, bring more non-EU operators within the scope of EU VAT, intensify the administrative burden on EU fiscal authorities and create further competitive distortions.

6.3 Quantification of the distortion in the EU-third country market[139]

6.3.1 *Direct and indirect services*

What is the impact of a harmonised VAT rate of 8% on competition between any direct and indirect air services in the whole EU-third country market?

This section quantifies the impact of a harmonised VAT rate on competition between direct and indirect air services. Only the air market is dealt with as no significant amount of third country travel exists for the other modes. It builds upon the case study of the Frankfurt-New York route model which is presented in detail in the Appendix. A summary of the findings from this route model with a 8% VAT rate for the Frankfurt-Other EU airport leg of the indirect service to New York are:

- an effective leisure price increases for the whole Frankfurt-New York journey in the region of 3%;
- total demand is almost unaffected, but route distortions have been introduced with a 0.4% shift away from indirect travel towards direct air services
- profitability of the market[140] is virtually unaffected, with a net loss of only 302 million ECU occurring as the increase in gross turnover almost offsets the increase in VAT revenues.
- there are however, definite winners and losers. The winners are all operators with direct services to destinations outside the EU through increased turnover on direct routes, of which a large proportion would be non-EU operators. German operators face a redistribution of their passengers from the indirect to the direct service while losses occur for other-EU operators.

Expanding this case study to the overall European market, German operators are also likely to suffer; if for example, passengers from Austria, Denmark and Sweden, who previously used connecting services to Frankfurt or other German airports, now avoid Germany altogether by travelling direct. The quantification of this total distortion, and its effect on competition between EU and non-EU operators, is the subject of the next section where groups of routes in the EU are examined under each of the taxation options. These groups are identified in terms of particular attributes such as:

- the proportion of business travellers;

[139] Indirect air mode is defined as passengers who transfer at another EU airport while direct air mode is defined as all direct services with a possible transfer outside the EU territory.

[140] In order to allow the assessment of the true impact of each option for the operators, the net gains/losses that arise under each option are determined by subtracting the increase in VAT liabilities from any increase in gross turnover.

- the extent to which the VAT increase is passed on to consumers;
- the size of the non-EU sector; and
- the proportion of passengers travelling indirectly via other EU airports.

6.3.1.1 *Departure/arrival options*

Table 6.1 shows the impact of a harmonised rate, under the departure/arrival options, on competition between direct and indirect services. Thus, depending on route characteristics, ***the effect of a switch to the departure/arrival option under a harmonised rate of 8% is a reduction in demand on the indirect leg of between 1.8% and 2.8%,*** with a significant proportion of this demand diverting to the direct service. Further, this shift in demand increases as the proportion of the non-business segment and the percentage pass through in the business segment rises.

Table 6.1: Competition between direct and indirect routes, under harmonised VAT rates of 8% - departure/arrival option.

Indirect Route[1]			
% Business Share	**% pass through (business)**	**% Change in Demand**	**Examples of Routes**
0%	n/a	-2.8%	Barcelona-New York
15%	100%	-2.4%	Lyon-New York
15%	25%	-2.2%	Frankfurt-New York
30%	100%	-2.0%	Paris-New York
30%	25%	-1.8%	London-New York

Source: KPMG analysis

6.3.1.2 *Operator option*

Under the **operator** option, identical results to the departure option will occur if it is assumed that non-EU operators on intra-EU routes are subject to the same harmonised rate of 8%. If this assumption is relaxed, then prices remain unchanged for non-EU operators, and the level of demand switching from indirect services will be less as shown in Table 6.2.

Table 6.2: Competition between direct and indirect routes[1], under harmonised VAT rates of 8% - operator option.

Indirect route			
%Business Share	**% Non-EU operators**	**% Pass through**	**Change in Demand (%)**
0%	20%	n/a	2.2%
0%	40%	n/a	1.7%
15%	20%	100%	1.9%
15%	40%	100%	1.4%
15%	20%	25%	1.8%
15%	40%	25%	1.3%
30%	20%	100%	1.6%
30%	40%	100%	1.2%
30%	20%	25%	1.4%
30%	40%	25%	1.1%

Source: KPMG analysis

Overall the analysis shows that the amount of switching from an indirect service to a direct service will become smaller as the level of non-EU operators' market share increases or alternatively as the level of competition increases. In terms of the effect on key variables, if non-EU operators command a market share of 20% then ***estimates suggest that at worst (routes with a non-existent business sector) just over 2% of demand transfers, whereas at best (mainly leisure routes, with low pass through rates in the business segment) only 1.4% of demand transfers from the indirect to the direct service***. If the market share of non-EU operators rises to 40% then these figures are reduced to 1.7% and 1.1% respectively.

6.3.1.3 *Customer option*

Under the customer option, the diversion of passengers from the indirect to the direct route will be identical in magnitude and effect to the operator option where the proportion of non-EU customers equals the proportion of non-EU operators. This means that as the market share of non-EU customers on the indirect route rises, then the demand shifting away towards direct services becomes smaller.

To summarise, under the each of the options, the effect of harmonisation of VAT will be to introduce competitive distortions between direct and indirect air services, if the VAT rate is applied to legs within the EU, and if journeys commencing within the EU and terminating outside the EU are not subject to VAT.

6.3.1.4 *Multi-VAT rates*

Under the existing VAT regime for the Frankfurt-New York via an other European airports route, a switch to any of the place of taxation options will have no effect since, in practice all international air transport is zero rated in EU Member States. If however, the other European airport is within Germany, then domestic VAT rate would apply on the Frankfurt–Other German airport leg of the journey and a significant distortion will occur. This is unlikely for this particular route, but may be significant for other routes emanating from other parts of Germany, such as Munich–Frankfurt–New York.

6.3.2 ***EU and non-EU air operators***

What are the quantifiable distortions, arising from the introduction of a harmonised VAT rate, between EU and non-EU operators in the EU-third country market?

In terms of the whole EU-third country travel, the magnitude of the distortion between direct and indirect services, and therefore competition between EU and non-EU operators, is determined by the proportion of indirect air travel.

Recall, from the Frankfurt–New York case study that this share was around 16% of the market. If it is now assumed that in the whole intra-EU market the proportion of indirect air travel is in a range around this share, then an illustration of the likely range of effects, *vis-à-vis* competition between EU and non-EU operators, can be formulated. Table 6.3 presents the results of such analysis with the proportion of indirect air trips assumed to account for 10%, 20% and 40% of the market.

From Table 6.3, depending on route characteristics, demand falls from 1.4% to 2.2%, if non-EU operators command a market share of 20% (the current market share) and avoid the harmonised VAT rate applied.

Table 6.3: Competition between EU and non-EU air operators under unequal VAT rates[1]

	Intra-EU	EU - third country		Net change	
	EU operator 000's (%change)	**EU operator 000's (%change)**	**Non-EU operator (000's) (%change)**	**EU operator (000's) (%change)**	**Non-EU operator (000's) (%change)**
Number of passengers (% share)	56100 (79%)	45100 (46%)	52900 (54%)	n/a	n/a
10% of intra-EU air passengers travelling on to third country					
Number of intra-EU passengers travelling on to third country-country	5610	n/a	n/a	n/a	n/a
Best case change in demand	-79 (-1.4)	+36 (+0.1)	+42 +(0.1)	-42 (-0.04)	+42 (+0.07)
Worst case change in demand	-123 (-2.2)	+57 (+0.1)	+67 (+0.1)	-67 (-0.07)	+67 (+0.10)
20% of intra-EU air passengers travelling on to third country					
Number of intra-EU passengers travelling on to third country-country	11220	n/a	n/a	n/a	n/a
Best case change in demand	-157 (-1.4)	+72 (+0.2)	+85 +(0.2)	-85 (-0.09)	+85 (+0.13)
Worst case change in demand	-247 (-2.2)	+114 (+0.3)	+133 (+0.3)	-133 (-0.14)	+133 (+0.21)
40% of intra-EU air passengers travelling on to third country					
Number of intra-EU passengers travelling on to third country-country	22440	n/a	n/a	n/a	n/a
Best case change in demand	-314 (-1.4)	+145 (+0.3)	+170 +(0.3)	-170 (-0.17)	+170 (+0.26)
Worst case change in demand	-494 (-2.2)	+227 (+0.5)	+266 (+0.5)	-266 (-0.27)	+266 (+0.42)

Source: IATA, AEA, KPMG analysis.

Notes

[1] *harmonised VAT rate of 8% for EU operators and a 0% rate for non-EU operators*

[2] *Best case assumes a fall in demand of 1.4%, while the worst case assumes a reduction in demand of 2.2%*

For illustrative purposes, the analysis assumes that **all** of the passengers who divert from the indirect service, derived in Table 6.1 and Table 6.2, will transfer to the direct service. Furthermore, if it is assumed that operators retain their market share, then the shift in demand towards non-EU operators can be quantified, with the exact amount of switching dependent on operators share in each market.

Currently, in the intra-EU market, 71 million scheduled international air trips were made in 1994 with 79% made by EU operators. For the 98 million third country-EU trips made the market share was slightly in favour of non-EU operators, who account for a 54%

share. Thus, from Table 6.3, with 10% of intra-EU air passengers using indirect routes for ongoing third country travel, the effect of a harmonised rate will be:

- a shift of 79,000 passengers onto direct routes in the best case scenario, rising to a shift of 123,000 passengers in the worst case scenario; and
- non-EU operators gaining between 42,000 and 67,000 passengers from EU operators.

Under the assumption that 40% of the intra-EU market is ongoing traffic (i.e travelling on to third countries), then estimates suggests that the loss of passengers experienced by EU operators is between 170,000 and 266,000 passengers.

To summarise, if a VAT rate is applied on the intra-EU legs of indirect services to third countries, this will have the effect of switching demand from indirect services and from EU operators.

6.4 Quantification of the distortion between EU and non-EU operators in the intra-EU market

What are the quantifiable distortions, arising from the introduction of a harmonised VAT rate, between EU and non-EU operators in the intra-EU market?

This section looks at the effects that a harmonised VAT rate has on competition between EU and non-EU operators for intra-EU travel only, with all modes of transport included in the analysis. In terms of terms of extending the above results to the intra-EU air market, two alternative scenarios have been investigated which are as follows:

- In the first case, it is assumed that no route substitution takes place and that passengers who might have diverted to the other routes instead simply transfer to the less expensive non-EU operator on the same route. ***This results in between 1.4% and 2.2% of demand being lost by the EU sector to the non-EU sector.***
- In the second case, non-EU and EU operators would charge the same price, either by non-EU operators increasing prices and therefore raising profits, or by the EU sector reducing prices to match the non-EU sector. ***Market shares would remain the same and there would either be a reduction in profitability for EU operators, or an increase in profits for the non-EU sector.***

The actual effect will be somewhere between these extremes, with some degree of competitive pressure forcing EU operators' prices, some extra profits taken by the non-EU sector, and some demand switching from the EU to the non-EU sector.

For the other modes - rail, coach and sea - the effect of a harmonised VAT rate will be much less significant, than in the air market, as both the level of demand and proportion of non-EU operators is considerably lower than in the air market.

However, significant effects will occur in certain areas, affecting Eastern European operators in the coach market, and 'flag of convenience' vessels in the sea market on routes such as Greece–Italy.

Table 6.4 summarises the effects of a switch to harmonised rates where non-EU operators avoid the charge. For this analysis, the effective VAT rate for rail and coach travel is assumed to be broadly similar to the harmonised rate; this does not affect this analysis as the main concern is the effect of differences between EU and non-EU operators.

Table 6.4: Competition between EU and non-EU operators (air, rail, sea and coach) under harmonisation, with unequal VAT rates[1] (initial rail/coach VAT rate of 8%)

Route	Competing Modes	Departure/Arrival or Operator Option
Short-distance intra-EU	Road Rail Coach[1]	No change in demand No change in mode shares No significant change in non-EU operators share Small decrease in fiscal revenues
Medium-distance	Air[1] Road Rail Sea[1]	No change in demand Small shift towards air and sea travel Increase in non-EU operators market share Decrease in fiscal revenues
Long-distance, intra-EU mainly leisure travel	Air[1] Rail Coach[1] Sea[1]	Increase in demand Small shift towards air and sea travel Large increase in non-EU operators' market share Large decrease in fiscal revenues
Long-distance, intra-EU other travel	Air[1]	Increase in demand No change in mode shares Increase in non-EU operators' market share Decrease in fiscal revenues
Long distance, EU-third country travel	Air[1]	No change in demand Large shift from indirect to direct services Large increase in non-EU operators' market share Large decrease in fiscal revenues

Source: KPMG analysis

Notes

[1] Non-EU operators have a significant share of the market

6.5 The impact of future developments in the transport market

In the future, it is likely than non-EU operators will enter the intra-EU market in greater numbers as liberalisation of the air market continues. As a result, total revenues collected by the fiscal authorities will be less (all things equal). However, the general growth in the air market of around 5% will dwarf this effect and ensure that total VAT revenues collected increase.

At present many of intra-EU routes are considered not to be particularly profitable. If costs were increased in the European market significantly, it would be difficult to envisage a situation in which they could be absorbed without a further reduction in profitability or increase in loss. Many operators use the intra-EU markets as access markets for more profitable transatlantic routes and so indirectly, EU-third country routes would suffer.

In addition, the specific competition between US and EU operators needs to be analysed, as a 10% sales tax[141] is expected to apply in the US for the intra-US leg of the indirect service from late 1997 (see Section 4.3.3). Thus, in an analogy to the situation in the EU market above, for US-third country travel, there may be a switch from indirect to direct services. However in terms of a switch from US to EU operators for intra-US traffic, the effect is likely to be small as EU operators currently have a negligible share of the intra-US market. This may change with the EU-US open skies agreement.

[141] Interview with airline operators; the tax is imposed on sales in the US, for domestic travel within the US.

6.6 **Country-specific issues**

Intra-community travel taking place over non-EU countries and travel to third countries raises a number of country-specific issues, most notably for Greece, Portugal, Ireland, Finland and Sweden.

In the case of Greece, Portugal and Ireland, and to a significant extent Finland and Sweden, very limited competition exists between air and the other modes of transport for intra-EU travel. The introduction of a harmonised VAT rate would therefore affect negatively air travel to and from these countries, without having any corrective effect, in terms of competition between modes. Our quantitative estimates (see Appendix 5.3) of this effect are the following:

- in Greece the demand in the air market falls by 197,000 in comparison to a fall in the total market of only 200,000. In terms of additional VAT revenues raised, the air market alone accounts for 78 million ECU out of the total 80 million ECU collected;
- in Ireland changes in the air market, accounts for a fall in passenger demand of 190,000 out of a total fall of 210,000. Air travel accounted for 77 million ECU out of the total 78 million ECU additional VAT revenues raised by the fiscal authorities; and
- in Portugal changes in the air market accounted for a reduction in passenger demand of 180,000 out a reduction in the total market of 184,000.

In the case of Greece and to a lesser extent Finland/Sweden, travel to neighbouring non-EU countries could be favoured in terms of tourism flows, as travel to and from these countries would be treated as international travel and therefore attract a 0% VAT rate. A broad estimate is a 2.8% reduction in demand derived from the impact of a harmonised VAT rate on direct/indirect services (see Table 6.1). This estimate is an upper bound as a demand switch from indirect to direct services (ie Frankfurt-Amsterdam-New York to Frankfurt-New York) will be considerably less sensitive to price changes than destination shifts (i.e. UK-Greece to UK-Turkey). Broad estimates of this effect is a reduction of.

- 90,000 passengers per annum in the tourist market to and from Greece; and
- 120,000 passengers per annum in the tourist market to and from Finland/Sweden.

In the case of Switzerland, in addition to the tourism flow issue mentioned above, there is a potential problem of intra-EU travel taking place on the territory of this country; for example journey between France and Austria (i.e. intra-EU) could potential pass through Switzerland (third-country).

This does not have any implications for the departure/arrival option in both the harmonised and multi-VAT rate scenario as Switzerland will be treated in the same manner as any other zero rated Member State. For example on the France-Austria route, under the current distance based system rail and coach travel incur VAT on the proportion of journey within Austria (approximately one-quarter) with a resultant effective VAT rate of 2.5%. Now under the departure/arrival system, the whole of the Austria to France journey incurs a 10% VAT charge whereas in the opposite direction a 0% VAT charge is incurred. This result is a price rise for rail and coach travel as the effective rate of VAT increases from 2.5% to 5%. The implications for the tax system with respect to this route are identical to those analysed in the London-Brussels case

study (see Appendix 5) except that the level of VAT for the positive rated country is now 10% instead of 6%.

However, under the operator option the introduction of a harmonised VAT rate across the EU could favour Swiss air, rail and coach operators present in the intra-EU market. This is likely to be greatest for routes through Switzerland between neighbouring countries. Our estimates[142] suggest that as many as 20,000 air and 15,000 rail/coach passengers would travel by Swiss operators if the VAT rate is unequally applied between Swiss and EU operators. The effect in the rail and coach market is almost as large as the air sector, as Swiss air operators do not have a very large presence in the intra-EU market[143].

A similar argument also holds for eastern European operators (especially coach) in neighbouring countries such as Germany, Austria and Italy. However, the penetration of these operators in intra-EU markets is quite limited at present.

[142] This has been derived by estimating the proportion of intra-EU rail and coach services which are likely to travel through Switzerland (and therefore have a high proportion of Swiss operators). The estimate of the switch to Swiss operators, instead of EU operators, is then derived based on the analysis in Section 6.4.

[143] Estimated from Table 2.2 and AEA 1995.

6.7 **Impact of the harmonised VAT rate for domestic travel**

This section examines the effect of harmonising VAT rates at 8% within domestic markets (the discussion for sea travel is presented in Appendix 6.2). Recall, from Chapter 2 that the size of the domestic market is considerably larger than the intra-EU market, accounting for 31 billion passengers or 99% of all trips made within the EU. However, due to the smaller distances involved, the share of the market in value terms is much lower at 60%.

Table 6.5 presents a summary of key statistics in terms of volume of passenger trips and gross turnover; a detailed presentation of the data and its derivation is shown in Appendix 6.1. In terms of the importance of the different market segments, the market is dominated by urban trips. These account for just over 84% of all trips, with Germany, the UK, France and Italy having the largest markets. In terms of VAT revenues, estimates suggest that the fiscal authorities collected over 7 billion ECU or 5% of gross turnover in 1994, with Germany collecting the largest proportion of this, over 2 billion ECU.

It should be stressed that the figures provided in this section are very broad estimates. Furthermore, the prime concern is with the proportional changes that occur from the current regime rather than the absolute values presented.

Table 6.5 Domestic EU passenger transport market in 1994 - volume and gross market turnover by country of arrival/departure

	Passenger trips (millions)			**Gross market turnover (million ECU's)**	**Current VAT revenues**
	Urban	**Non-urban**	**Total**	**Total**	**Total**
Austria	405	105	510	4,150	378
Belgium	304	132	436	3,450	194
Denmark	316	68	384	3,800	0
Finland	405	66	472	2,550	143
France	4,316	756	5,072	25,950	1,354
Germany	7,873	1064	8,938	28,250	2,320
Greece	668	136	804	1,950	144
Ireland	192	47	238	800	0
Italy	3,154	748	3,901	26,350	803
Luxembourg	18	5	24	150	4
Netherlands	390	201	591	5,100	290
Portugal	1,109	129	1,239	4,100	195
Spain	2,168	512	2,680	14,100	1,246
Sweden	405	114	520	4,300	464
UK	4,347	763	5,110	17,700	0
Total	**26,071 (84.3%)**	**4,847 (15.7%)**	**30,918 (100%)**	**142,800**	**7,536**

Source: IATA, AEA, UIC, Eurostat, KPMG analysis

A key feature of domestic markets under the current regime is the application of differential rates of VAT for urban and non-urban travel. For example, in Germany urban travel, or travel over distances less than 50km, attracts a reduced rate of VAT of 7%, while for non-urban transport the normal rate of 15% is levied. A switch towards a

harmonised rate of 8% will therefore have different effects according to the market segment; to reflect this, urban and non-urban markets are modelled separately. However, a detailed disaggregation of data by mode for urban and non-urban travel in each of the EU15 countries was not available. Assumptions have therefore been used to derive this data together with specific assumptions, about how changes in VAT rates affect fares, and how sensitive the market is to these fare changes (a more detailed description is given in Appendix 6.1)

Note that market segmentation in the domestic model has been increased to cover three groups; business, leisure and commuting. The additional category of commuting has been included, as this reacts in a different way from the business and leisure markets.

6.7.1 ***Harmonisation of VAT rate***

What is the fiscal impact on total tax yields, at the Member State and EU level, of the introduction of a harmonised VAT rate in EU domestic markets?

The effects of a harmonised VAT rate of 8% is shown in Table 6.6. Overall, VAT revenues collected are increased by nearly 50%, or by 3672 billion ECU. Passenger demand is reduced by 0.1% while profitability of the market falls by 0.3% of gross turnover. These effects are however, vastly different according to market segment. For instance, profitability falls in the urban market by 0.6% of gross turnover, while in the non-urban market it increases by 0.3%. These results are a function of the different starting rates present in the urban and non-urban markets which on average increase in the urban market and fall in the non-urban market, as a result of the harmonisation.

At the country level, the most significant change in magnitude terms occurs for the UK which currently imposes zero rates of VAT on all domestic travel. Under harmonised rates, demand falls by 2.3% with a consequent fall in profits of 2.7% of gross turnover. Large proportional falls also occur for Ireland, Denmark and Luxembourg but as these countries have much smaller markets, the magnitude of the changes is considerably less.

Italy also experiences similar falls to the UK in the profitability of the urban market, but as an opposite effect of rising demand and market profitability occurs in the non-urban market, profitability in the country as a whole remains broadly unchanged with a small reduction of 0.2% of gross turnover.

In terms of the amount of VAT revenues, the largest rise in revenues collected occurs in the UK with an extra 1.5 billion ECU raised, followed closely by Italy which raises an extra 1.4 billion ECU.

Thus, the impact of a harmonised VAT rate in the domestic market is determined predominately by the urban market. Only a few of the EU Member States show significant changes in VAT revenues collected (particularly the UK and Italy) and the changes in demand for all countries range from -3.3% to +1.7%.

Table 6.6 Summary of a 8% harmonised VAT rate applied in the domestic market - by fiscal authority

By Member State				
Fiscal Authority	**Change in demand millions (% change)**	**Change in VAT revenues collected by fiscal authorities millions ECU (% change)**	**Change in gross turnover millions ECU (% change)**	**Net gains/losses millions ECU (% change)**
Austria	+3 (+0.5)	-82	-62	19 (+0.4)
Belgium	-3 (-0.7)	69	44	-25 (-0.6)
Denmark	-7 (-1.8)	319	221	-98 (-2.3)
Finland	-3 (-0.6)	51	34	-17 (-0.6)
France	-36 (-0.7)	644	486	-158 (-0.6)
Germany	+77 (+0.9)	-204	2	206 (+0.7)
Greece	0 (0.0)	0	0	0 (0.0)
Ireland	-8 (-3.3)	71	44	-27 (-2.8)
Italy	+66 (+1.7)	1437	1385	-53 (-0.2)
Luxembourg	0 (-1.3)	8	5	-2 (-1.4)
Netherlands	-4 (-0.6)	101	66	-35 (-0.6)
Portugal	-9 (-0.7)	126	94	-32 (-0.7)
Spain	-9 (-0.3)	-192	-19	173 (+1.1)
Sweden	+7 (+1.3)	-160	-111	49 (+1.1)
UK	-117 (-2.3)	1486	946	-540 (-2.7)
By mode				
Air	0 (+0.3)	4	49	+45 (+0.2)
Rail/ Underground	-28 (-0.3)	1576	1284	-291 (-0.5)
Coach/ Bus	-16 (-0.1)	2092	1801	-291 (-0.4)
Non-Urban	71 (+1.5)	-127	18	145 (+0.3)
Urban	-114 (-0.4)	3799	3117	-683 (-0.6)
Total	-43 (-0.1)	3672	3135	-537 (-0.3)

6.8 **Conclusions**

The aim of this section is to evaluate the fiscal impact and the impact on demand for passenger transport services in both the EU-third country and domestic travel markets under a multi-VAT and harmonised rate scenario. The key findings are as follows:

Impact of multi-VAT rates in the domestic and the EU-third country market

- the conclusion is that the departure and arrival options will make no difference to the existing competitive position of operators providing services in the domestic and international (EU to third country) market.

Impact of harmonised VAT rates in the EU-third country market

- the introduction of a positive rate of VAT across the EU, but not applied consistently for EU and non-EU operators, will adversely affect the competitive position of EU operators and increase the demand for services offered by non-EU operators under each of the taxation options. For a situation with non-EU operators commanding a 20% market share in the air market, it is estimated that demand for EU operators' services will fall by between 1.4% and 2.2% unless a mechanism is found to bring such operators within the scope of the EU VAT system.
- for EU-third country travel, a positive rate of VAT will have the effect of moving demand away from indirect routes, via other EU airports, to direct routes in order to avoid incurring a VAT charge on the intra-EU leg. Since non-EU operators are likely to have a greater market share of these direct services, demand for services for non-EU operators will again increase.

Impact of harmonised VAT rates in the domestic markets

- in the current regime, some Members States have identified urban, non-urban and intra-EU travel as distinct markets by imposing differential rates of VAT.
- in the domestic market, under the current regime, an estimated 7,536 million ECU, a very small proportion of gross turnover, is collected by the European fiscal authorities, of which the vast majority is collected by Germany.
- the key feature of domestic markets under the current regime is the application of differential rates of VAT for urban and non-urban travel. A switch towards a harmonised rate of 8% will therefore have different effects according to the market segment.

In the domestic market, urban trips dominate the market, accounting for over 84% of all trips and 60% in terms of gross turnover. Thus, the impact of a harmonised VAT rate in the domestic market will be determined predominately by gross turnover and the current taxation regime in place within the urban area.

- in terms of the economic effects at the country level, the most significant changes in magnitude terms occurs for the UK, which currently imposes zero rates of VAT on all domestic travel. Under a harmonised rate system, demand falls by 2.3% with a consequent fall in profits of 2.7% of gross turnover. Large proportional falls also occur for Ireland, Denmark and Luxembourg but as these countries have much smaller markets, the magnitude of the changes is considerably less.

- Only a few of the EU Member States show significant changes in VAT revenues collected, particularly the UK and Italy, while in terms of changes in passenger demand, all countries show relatively modest changes, ranging from -3.3% to +1.7%.
- In the domestic sea market, there is a loss in passenger demand of around 3% and an additional 84 million ECU is collected in VAT revenues by the fiscal authorities. In terms of profit, the market experiences losses of 113 million ECU or 3% of gross turnover.

Although relatively modest changes in passenger demand occur, any reduction in demand for public transport in urban areas is likely to have significant consequences in terms of the additional congestion costs involved, as passengers switch to private cars.