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JOINT MEETING OF TAX AND ENVIRONMENT EXPERTS

THE POLITICAL ECONOMY OF THE NORWEGIAN AVIATION FUEL TAX

This report was prepared by the Norwegian consultancy firm ECON Analyse for the Joint Meetings of Tax and Environment Experts under OECD's Environment Policy Committee and Committee on Fiscal Affairs.

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FOREWORD

This report was prepared by the Norwegian consultancy firm ECON Analyse for the Joint Meetings of Tax and Environment Experts under the Environment Policy Committee and the Committee on Fiscal Affairs.

It was prepared as part of a broader work on 'the political economy of environmentally related taxes'.

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TABLE OF CONTENTS

FOREWORD	2
TABLE OF CONTENTS.....	3
EXECUTIVE SUMMARY	4
1. THE INTRODUCTION OF THE AVIATION FUEL TAX	7
1.1 The history of the aviation fuel tax.....	7
1.1.1 A long history of aviation taxes.....	7
1.1.2 The aviation fuel tax and the Green Tax Reform.....	8
1.1.3 Later changes in aviation taxes	9
1.2 Opposition to the aviation fuel tax	10
1.3 Factors facilitating the tax reform	11
1.4 What could have stopped the tax?	12
2. ENVIRONMENTAL AND COST IMPACTS	14
2.1 Fuel tax vs. passenger or seat tax	14
2.2 Emission reduction options	14
2.3 Increased tanking abroad?	15
2.4 Cost impacts	15
2.5 Impacts on air travel demand	17
3. LESSONS FOR OTHER COUNTRIES	19
BIBLIOGRAPHY	22

THE POLITICAL ECONOMY OF THE NORWEGIAN AVIATION FUEL TAX

EXECUTIVE SUMMARY

Background and problem statement

In 1999 Norway introduced a CO₂ tax on aviation fuel. This report describes the circumstances surrounding the introduction of the tax, the opposition it faced and how this was overcome. We also briefly discuss the following questions:

- What political factors facilitated the implementation of the tax - and which factors could have stopped it?
- Which claims did the aviation industry present about the impacts of the tax - and which arguments were used in response?
- Which changes have been made in the tax over time and why?

The study further addresses the relative cost impacts on the sector stemming from the tax as well as potential effects on air travel demand and the administrative burden for the government, including an assessment of the extent to which the aviation industry has managed to avoid paying the tax by fuelling in neighbouring countries. The report also provides brief qualitative assessments of possible environmental impacts of the tax. Finally the report seeks to highlight the important lessons other countries can learn from the Norwegian experience.

A long history of aviation taxes

The aviation fuel tax is one of many different taxes and charges that have been imposed on air traffic in Norway:

- In 1978 a *charter traffic tax* was introduced.
- In January 1994 a *passenger tax for all international flights* was introduced, replacing the charter tax.
- In April 1995 the passenger tax was also introduced for *domestic flights* between Oslo and the largest Norwegian cities.
- In April 1998 a *seat tax* was imposed, replacing the passenger tax.
- In January 1999 a *CO₂ fuel tax* was imposed for *all flights*. In May 1999 it was abolished for *international flights* due to violation of the many bilateral Aviation Service Agreements (ASAs) which Norway has with other countries.
- In May 1999 a *passenger tax* similar to the one that existed until April 1998 was replacing the *seat tax*.
- In January 2001 *similar passenger tax rates* on domestic and international flights were imposed in order to harmonize the tax system with the EEA Agreement.

- In April 2002 *the passenger tax was removed* in connection with changes in the VAT system for aviation.

In addition to these taxes several charges related to payment for air infrastructure and airport services etc. have been paid. The fuel tax rate has been adjusted for general price level increase from NOK 0.24 per litre in 1999 to NOK 0.31 per litre in 2005. For 2006, the Government has proposed to increase the rate to NOK 0.53 per litre.

Limited political opposition to the aviation fuel tax

In January 1999 the Norwegian CO₂ aviation fuel tax was introduced for all flights with little discussion in the Parliament. There were two primary reasons for the lack of discussion:

- The tax was part of a comprehensive Green Tax Reform where other subjects, such as the consequences of green taxes for the energy intensive industries, were of greater concern. Most political parties shared the ambition that Norway should play the role of a pioneer internationally in imposing green taxes, and extend existing taxes to exempt sectors.
- The increased expenses for the airlines from the fuel tax were compensated by an equivalent reduction in the seat tax. The airlines were indeed against the tax on aviation fuel, but the economic compensation no doubt facilitated the implementation of the reform.

In contrast, the seat tax met fierce opposition from the airlines and many politicians due to a substantial increase in the aviation tax level when it was imposed.

EU membership would have stopped the fuel tax

Had Norway been an EU member, the tax would most likely not have been in compliance with the EU Mineral Oil Directive (92/81/EC). Sweden had to withdraw a similar tax due to this directive, which is not part of the EEA agreement. However, the EU Council Directive 2003/96/EC "restructuring the Community framework for the taxation of energy products and electricity" from 2003 allows for taxation of aviation fuels for domestic and eventually also intra-Community flights. Thus, future taxation of aviation fuel for domestic use is possible also for EU member countries.

Non-compensation of the tax expenses would have made it more difficult to impose the fuel tax, but would not necessarily have stopped it.

Small impacts of the fuel tax

According to a public committee that was appointed by the Government to investigate the competitive conditions in Norwegian air traffic, the introduction of the air fuel tax in 1999 resulted in increased costs for airlines with mainly domestic flights compared to airlines with significant international traffic.

Because of all the changes in the various taxes and duties on air traffic, it is difficult to assess the cost impacts on the airlines due to the fuel tax. However, the total level of aviation charges seems to have increased substantially since 2001, mainly due to charges related to security measures. The aviation fuel tax seems to be of minor importance in this picture because of its small revenue compared to the revenue from the other duties.

The administrative costs for the Government related to the aviation fuel tax are very low. Fuelling abroad seems to have been limited due to small potential savings from this and the fact that most planes are primarily dedicated to shuttling traffic between Norwegian cities. Had the tax rate been higher, tanking abroad might have been more attractive.

The effects on air ticket prices and thus air travel demand seems to have been negligible due to increased competition in the domestic market and cost reduction programmes imposed by the airlines. Environmental impacts of the tax have

probably been negligible. However, the marginal effects of the tax cannot be isolated from the effects of all other changes in the aviation sector over the years.

Lessons for other countries

In our view several lessons could be learned from the Norwegian experience:

- *It is difficult to implement a fuel tax on international aviation* due to incompatibility with the ASAs. There are more than 2,500 bilateral ASAs around the world, but it would of course be possible to renegotiate this part of the ASAs if some of the countries agree on this. To avoid violating these agreements the revenue from the taxes could perhaps be recycled according to some parameters not directly related to the tax. Ideally most industrialized countries should agree on a common taxation scheme. Today only some countries seem to be in favour of fuel taxation on international flights.
- *CO₂ emissions allowance trading appears to be a more viable option for international flights than CO₂ taxes.* An emissions allowance trading system for aviation linked to an international emissions trading system for land-based sources could be an interesting option to pursue. Allocation of allowances free of charge to existing and new carriers could contribute to avoid severe competitive distortions among carriers and should ensure compliance with the ASAs.
- *Fuel taxes on domestic flights are a viable option.* However, fierce opposition against such a tax from the airlines could be expected. This could be overcome by imposing a relatively low tax rate at the outset, reduce other levies or duties on air traffic or redistribute the proceeds from the fuel tax among the air carriers according to some pre-defined rules.
- *Domestic fuel taxes should be introduced as part of a broader tax reform strategy.* National CO₂ taxes should be imposed with the broadest tax base to ensure cost efficient emission reductions and facilitate the implementation of the tax.
- *Would a seat or passenger tax be easier to implement?* A seat or passenger tax does not appear to violate the ASAs, but would not have any impacts on pure freight flights. Seat or passenger taxes would not stimulate tanking abroad. A seat tax could also have rather positive environmental impacts, as it increases the incentives to reduce the number of flights with empty seats. However, these taxes were rather unpopular in Norway, and seemingly more unpopular than the fuel tax. Thus, the issue of imposing a seat or passenger tax should be carefully considered.

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1. THE INTRODUCTION OF THE AVIATION FUEL TAX

1. In January 1999 Norway was seemingly the first country in the world to introduce a CO₂ tax on aviation fuel. Today only Australia, Brazil, Canada, Japan, Norway and the US have a tax on aviation fuel (ECON, 2004). In the first part of this chapter we describe the circumstances surrounding the introduction of the Norwegian aviation fuel tax. Thereafter we look at the major arguments used against the reform and how the Government responded to the opposition to the tax. Finally, we seek to explain what political issues facilitated the implementation of the tax - and what could have stopped it.

1.1 The history of the aviation fuel tax

2. The aviation fuel tax is one of many different taxes and charges that have been imposed on air traffic in Norway. The various taxes have been changed from one year to another, and the increases in one tax have often been followed by reductions in other taxes. The aviation fuel tax has been closely related to one other tax in particular, namely the air passenger tax. In order to understand the circumstances surrounding the introduction of the aviation fuel tax, we give a brief presentation of the passenger and seat taxes.

1.1.1 A long history of aviation taxes

3. The first air passenger tax, the tax on *charter traffic*, was introduced as early as 1978 (NOK 100 per passenger). In January 1994 the charter tax was replaced by a general *passenger tax on all international flights* (NOK 60 per passenger).

4. In April 1995 the passenger tax was also introduced on *domestic flights* between Oslo and the largest Norwegian cities, Bergen, Trondheim, Kristiansand and Stavanger. The rates were NOK 130 per passenger on international flights and NOK 65 on domestic flights. This was done primarily in order to raise public budget revenue. In addition, the Government gave the tax an environmental justification by pointing at the fact that the tax was introduced on distances where railway was a relevant alternative [St. prp. no 1, Supplement no.9 (1994-95)]. Stortinget (Parliament) supported the proposition [B. Innst. S II (1994-95)].

5. In April 1998 the tax on air passengers was replaced by a *seat tax*, based on the number of seats in each airplane. The rates were NOK 130 per seat on international flights and NOK 65 per seat on domestic flights. The Government argued that the new tax would encourage the airlines to increase the number of passengers on each flight and in that way reduce the environmental load per passenger [St.prp.no.1 Supplement no.3. (1997-98)]. In addition to the anticipated environmental effects, the seat tax would increase the annual public revenue by NOK 430 million, more than a 60 percent increase compared to the revenue from the passenger tax, since there were more seats than passengers on most flights.

6. The proposed seat tax encountered fierce opposition from the airlines due to the substantial increase in the tax burden. They warned that the passengers throughout the country would have to pay for the increased tax, not only those travelling between the larger cities. They also argued that the seat tax would make it difficult to establish new routes, as these normally have many empty seats while building a market. In Parliament a clear majority was against the seat tax proposal from the Government. Two

opposition parties nevertheless accepted the tax as part of an overall settlement with the Government regarding the fiscal budget for 1998 [B. Innst. S.no.1 (1997-98)]¹.

1.1.2 *The aviation fuel tax and the Green Tax Reform*

7. This was the situation when the *aviation fuel tax* was introduced for the first time in January 1999. The rate was NOK 0.24 per litre aviation fuel.

8. The aviation fuel tax was proposed by the Government in April 1998 and was passed by the Parliament in June the same year [Innst.S.no.247 (1997-98)]. The proposal of an aviation fuel tax was part of a broader Green Tax Reform proposal [St. prp.no. 54 (1997-98)]. The Green Tax Reform was a follow up of the proposals from the Norwegian Green Tax Commission (1996). The proposition from the Government was submitted to the Parliament together with a White Paper from the Ministry of Environment on the follow up of the Kyoto Protocol [St.meld.no.29 (1997-98)].

9. Based on the recommendations of the Green Tax Commission, the Government proposed an increase in green taxes in many different areas. An important objective with the reform was to establish a more efficient green tax regime. In the *CO₂ taxation system* that was introduced in 1991 the rates were not differentiated according to carbon content, and many sectors, such as aviation, were exempt from taxation. According to the Green Tax Commission, this was a major weakness of the tax regime.

10. One of the main proposals from the Government was therefore to extend the CO₂ tax. The government proposed that almost all end uses of fossil fuels, including aviation, should face a minimum CO₂ tax of NOK 100 per tonne CO₂². This was approximately the then estimated level for the allowance price in a future, international CO₂ emissions allowance market to fulfil the emission obligations of the Kyoto protocol. Combined with higher CO₂ taxes in some other sectors and use of other policy instruments in sectors not taxed, model calculations indicated that this would fulfil the Norwegian obligations according to the protocol. It was also proposed to reduce general labour taxes, to ensure a revenue neutral change in the tax system.

11. In addition, the Government proposed an *extension of the sulphur (SO₂) tax*. A low rate was proposed, NOK 3 per kg SO₂ for sources that were not already taxed, including air transport. In comparison, the SO₂-tax on mineral oil in some other uses at that time was NOK 17 per kg. However, due to the very low sulphur content in jet fuel, aviation was hardly affected by this tax.

12. At the same time, the Government recognized that the level of taxation would have to be determined on a pragmatic basis, where the declared Norwegian political goal of being a frontrunner in climate change policy would have to be weighted against the costs for Norway of being the pioneer in this area. The adjustments in the tax should therefore be considered in relation to the level of CO₂ taxes imposed in other countries. To reduce the increased costs for the most affected sectors and regions, the Government proposed that these were compensated. Therefore, when the aviation fuel tax was introduced, the seat tax was reduced correspondingly, to NOK 106 per seat on international flights and NOK 53 per seat on domestic flights. In April the same year, the seat tax was increased to NOK 109 per seat on

¹ The Government, a minority government consisting of three centrist parties, had just replaced the former social-democratic party after the election in September 1997. The proposed seat tax was part of the new Governments' first fiscal budget proposal for 1998, and the two right wing parties in Parliament did accept the budget proposal with minor changes in order to avoid a cabinet crisis.

² In addition to air transport, the proposed extension of the tax affected the production of metals, industrial chemicals, cement, refinery products, domestic use of gas, fisheries, and domestic ship transport.

international flights and NOK 54 per seat on domestic flights. The CO₂ tax rates for aviation were about half the rates for most other users of oil products.

13. Thus, in sum the aviation sector was not supposed to be facing an increased tax burden as a result of the Green Tax Reform. However, the tax reform could nevertheless potentially have positive environmental benefits even without any revenue increase, see next chapter.

1.1.3 Later changes in aviation taxes

14. Shortly after the introduction of the aviation fuel tax, uncertainty arose as to whether the tax was in accordance with bilateral air-transport agreements for international flights between Norway and several other states. According to the Government, the tax on aviation fuel had been considered with regard to the Chicago Convention on civil aviation as well as the EEA (European Economic Area) regulations. It was assumed that the tax would not conflict with Norway's commitments according to international laws in these areas. However, the Government had not specifically considered its commitments to bilateral aviation agreements. These agreements had certain restrictions on the right to tax fuel supplies used in international air traffic.

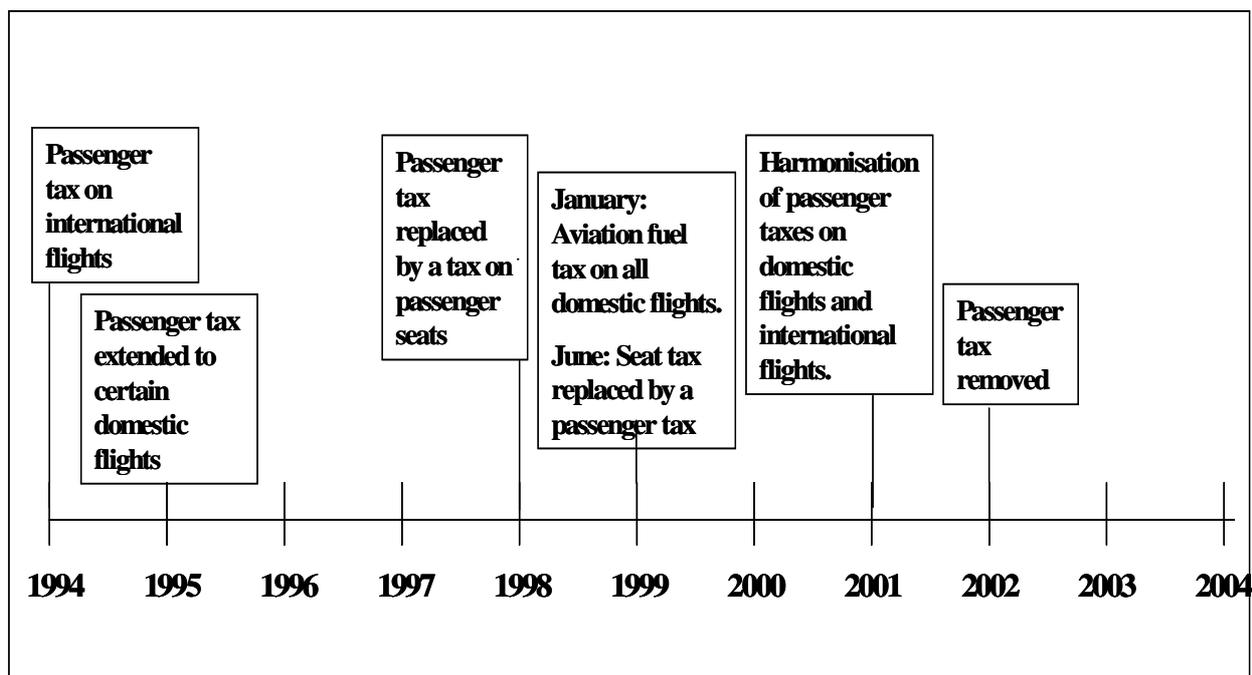
15. In March 1999 the Government therefore proposed to remove the emission tax on aviation fuel for international air traffic [St. prp. no. 53 (1998-99)]. The proposal was adopted by the Parliament in May the same year [Innst. S. no. 163 (1998-99)]. Both the CO₂ and the SO₂ taxes on aviation fuel used in international flights were removed from 1 January 1999, and the payments of these taxes that had already been made were refunded with interest compensation. The fuel tax on domestic flights remained unchanged.

16. In connection with the removal of the aviation fuel tax on international flights, a majority in Parliament also decided to remove the seat tax and replace it with a *passenger tax* similar to the one that existed until April 1998. In order to harmonize the taxes with the EEA Agreement, the Government introduced similar passenger taxes on domestic and international flights respectively in 2001.³ In 2002, the passenger tax was completely removed. This was done in connection with changes in the VAT on aviation. In 2002 air transport was taken out of the VAT system. In the reform of the VAT system which was introduced in mid-2001 a zero-rate VAT had been introduced for air transport. This change was made revenue neutral by increasing the passenger tax rates somewhat. From April 2004 passenger transport (including air transport) was included in the VAT system, but at a reduced rate of 6%.

17. The *aviation fuel tax system* has remained unchanged since 1999, and there have been only moderate increases in the rate, from NOK 0.24 per litre in 1999 to NOK 0.31 per litre in 2005. However, for 2006 the Government has proposed to increase the rate to NOK 0.53 per litre for domestic aviation and for sea freight transport. This is the same as the proposed tax rate for mineral oil products in general.

³ The air passenger tax on domestic flights was increased from NOK 116 per passenger to NOK 128, whereas the passenger tax on international flights was reduced from NOK 232 to NOK 128.

Figure 1.1 Changes in the Aviation Fuel Tax and Passenger/ Seat Taxes since 1994



1.2 Opposition to the aviation fuel tax

18. Whereas the seat tax on air traffic encountered fierce opposition both from the airlines and the majority in Parliament, the tax on aviation fuel encountered opposition mainly from the airlines. They presented their objections on many occasions. The airlines contacted members of the Green Tax Commission on several occasions during their work. They also presented their arguments against the tax in various letters to the Ministry of Finance as well as the Standing Committee on Finance and Economic Affairs in the Parliament. Despite opposition from the airlines, all parties in Parliament supported the aviation fuel tax.

19. The main arguments from the airlines against the aviation fuel tax may be summarized as follows:

20. The airlines' main concern was about the costs. They worried about the total tax level and doubted that the new tax would actually be fully compensated. They also pointed to the fact that the CO₂ taxes were already high in Norway compared to most other countries and that an introduction of CO₂ taxes in other countries was unlikely. They feared that the aviation fuel tax would prevent Norwegian airlines from competing with EU airlines on equal terms in the forthcoming deregulation of aviation in the European Union. They asked the Government to postpone the introduction of a fuel tax until the announced EU-rules in the area were clarified and called for a comprehensive examination of the various taxes in the aviation sector in order to assess the competitive conditions in air traffic.

21. Also, the airlines questioned the anticipated positive effects on CO₂ emissions of the aviation fuel tax. They warned that the tax could result in more tanking in neighbouring countries, causing a distortion in competition between airlines with mainly domestic flights and those with extensive international traffic. An increased tax level would, according to the airlines, reduce the economic basis for investing in environmental protection measures later on. They also favoured a system of CO₂ emission trading as an alternative to the CO₂ fuel tax.

22. Furthermore, the airlines argued that the aviation fuel tax could be problematic with regard to international agreements. According to the airlines the aviation fuel tax was in conflict with the International Civil Aviation Organization's (ICAO) Resolution on taxation of aviation fuel stating that "...the fuel, lubricants and other consumable technical supplies contained in the tanks or other receptacles on the aircraft shall be exempt from customs and other duties". Further, they claimed that the tax was incompatible with the European Economic Area agreement by constituting an obstacle to the exercise of the right to supply air traffic services within the EEA area. They also claimed that the tax was in conflict with Norway's taxation obligations in the bilateral air transport agreements. In 1998 there were 93 such agreements.

23. When the Green Tax Reform was debated in Parliament in June 1998, the opposition from the airlines was not of much concern. To the extent that aviation was debated, the political parties were concerned about another tax, namely the tax on air passenger seats that had been introduced one year earlier. As mentioned above, the seat tax met fierce opposition both from the airlines and the opposition parties.

24. In May 1999 the airlines were finally heard on one point: The Parliament asked The Government to appoint a commission to investigate the competitive conditions in air traffic, both nationally and internationally [Innst. S.no. 163 (1998-99)]. The Commission appointed consisted of representatives from both the authorities and the aviation sector. In its final report⁴, the Commission concluded that the aviation fuel tax caused competitive distortions between airlines with mainly domestic flights and those with extensive international traffic. The conclusions of the Commission were seen as a victory by the airlines. However, the government made no changes in the tax as a result of the report⁵.

25. In July 1999 the Association of Norwegian Airlines asked the EFTA Surveillance Authority (ESA) to evaluate the Norwegian environmental tax in relation to EU law, and asked ESA to urge Norway to withdraw the tax in question. However, according to ESA, the Norwegian authorities were entitled to keep the tax on domestic air traffic as long as Norway had not ratified the EU Mineral Oil Directive. The EU Council Directive 2003/96/EC "restructuring the Community framework for the taxation of energy products and electricity" from 2003 allows for taxation of aviation fuels for domestic and eventually also intra-Community flights. Thus, future taxation of aviation fuel for domestic use is possible also for EU and EEA member countries.

26. Every year since 1999, the Association of Norwegian Airlines has repeated its opposition to the aviation fuel tax. The critical remarks have been formulated in letters to the Standing Committee on Finance and Economic Affairs in Parliament as comments to the annual fiscal budget proposals.

1.3 Factors facilitating the tax reform

27. As indicated above, the aviation fuel tax was introduced without much debate in Parliament. Indeed there was opposition from the airlines, but they did not manage to get attention in the public debate. There are several reasons for this.

⁴ *The significance of taxes, duties and fees for the competitive conditions in air traffic*, Report from the Commission investigating the competitive conditions in air traffic, Oslo: 30 September 1999.

⁵ In a separate comment in the report the representatives from the airlines were also concerned about the so called "affiliation flights", domestic flights being part of a trip to a destination abroad. They claimed that these affiliation flights should be considered as an integral part of the international air traffic, and hence that they should not be subject to taxes on air fuel. The rest of the Commission did not support this request.

28. Most political parties shared the ambition that Norway should continue to play the role of an international pioneer in environmental policy, particularly in imposing green taxes. Most political parties were also concerned about Norway's commitments in the Kyoto Protocol and how to reach the required emission reductions. Moreover, Norway already had a great deal of experience with environmental taxation, particularly on fuels. Since the early 1990s, tax instruments had played an important role in providing incentives for cleaner production and consumption patterns. It was recognized that CO₂ taxes were already at a high level in many sectors and that other countries made relatively little use of taxes in their environmental policies. There was nevertheless a general agreement that CO₂ taxes were an important instrument and that they should remain so.

29. Another major facilitator was that the introduction of taxes on aviation fuel was overshadowed by other parts of the comprehensive Green Tax Reform. Air traffic was not even mentioned when the Parliament discussed the Green Tax Reform⁶. An important reason for this was that the opponents of the proposed CO₂ tax were primarily occupied with the consequences for energy intensive industries. They feared that the industry would move to other countries and argued that it was unlikely that the Norwegian CO₂ taxes would exert any influence on the level of ambition and choice of policy instruments in the follow up of the then newly negotiated Kyoto Protocol. The opposition parties in Parliament therefore preferred a system of CO₂ emissions trading. They argued that emissions trading would be a better tool with regard to both emission reductions and the interests of the industry.

30. Furthermore, the fact that the additional costs due to the fuel tax would be compensated by an equivalent reduction in the duty on passenger seats made the introduction of the tax far less controversial than it would have otherwise been. This is no doubt one of the main reasons why the tax did not meet more opposition. The debate following the introduction of the tax on passenger seats illustrates this point. When the Government proposed the seat tax in November 1997, both the airlines and most opposition parties were in fierce opposition, and the seat tax was also given a great deal of publicity in the media. The opposition was based on the fact that the seat tax would levy additional costs on the airlines that would have consequences, not only for the airlines themselves, but also for the passengers and the possibilities of establishing new routes.

31. The airlines were also concerned about the total tax level. According to the Association of Norwegian Airlines, aviation taxes in Norway constituted 31 percent of passenger revenues in 1999, as compared to 15-20 percent in other countries. The total tax level, as opposed to the type of tax, was the airlines' main concern (Association of Norwegian Airlines, 1999c).

32. An additional reason for the lack of public debate about the aviation fuel tax suggested to us by the Association of Norwegian Airlines is that the Association did not have the necessary human resources at the time when the reform was debated to succeed in directing the political parties' attention to the aviation sector.

1.4 What could have stopped the tax?

33. Having looked at the arguments against the introduction of the tax and the response in the Parliament, we can conclude that there was not sufficient opposition in order to stop the reform.

34. Which factors, then, could have prevented the introduction of the aviation fuel tax? Of course, this question allows only for speculation, but we will suggest some possible factors. In general, it would probably have been more difficult to introduce the tax if the proposal had not been part of a broader green tax reform.

⁶ Report from the debate in Parliament, 17 June 1998, Oslo: The Norwegian Parliament.

35. As we have pointed out earlier, it is very likely that an important premise for the aviation fuel tax was the fact that the additional costs were compensated. Without the compensation, the economic consequences would have been more serious and hence the opposition would no doubt have been more pronounced and persistent. In that case, the chance of getting attention and support would have certainly also been greater. The fierce opposition against the seat tax clearly illustrates this.

36. International commitments represent another factor that could have stopped the new tax. As mentioned earlier, the Government had to remove the tax on fuel for international air traffic shortly after the introduction of the tax. This was due to uncertainty as to whether this tax was in line with bilateral air-transport agreements.

37. If Norway had been a member of the European Union, not only the tax on international traffic, but also the tax on domestic traffic would have been questioned. The Swedish government had to withdraw a similar tax due to non-compliance with the EU Mineral Oil Directive. In June 1999 the EC Court delivered a judgment in a dispute between Braathens Sverige AB and Svenska Riksskatteverket (Swedish National Tax Board). In the judgment, the EC Court established that the Mineral Oil Directive (92/81/EEC) constituted an obstacle for levying the Swedish national environmental tax on aviation fuel. The tax was based on emissions of hydrocarbons and nitrogen oxide as well as consumption of aviation fuel, and was therefore defined by the EC Court as a tax on aviation fuel. The Mineral Oil Directive is not part of the EEA agreement, and has thus not been ratified by the Norwegian Parliament. As previously mentioned, this directive is no longer an obstacle for EU member states' taxation of aviation fuel for domestic and eventually also intra-Community flights.

2. ENVIRONMENTAL AND COST IMPACTS

2.1 Fuel tax vs. passenger or seat tax

38. The Norwegian passenger and seat taxes were imposed primarily for fiscal reasons, even if there were environmental arguments put forward for the first introduction of the passenger tax and the switch from a passenger tax to a seat tax. In contrast, the stated intention with the fuel tax has been to reduce CO₂ (and SO₂) emissions. Still, it is of interest to compare the environmental effects of the various tax regimes.

39. Since a passenger or seat tax is not directly linked to emissions from the aircrafts, they impose no direct incentives for airlines to use more environmental friendly technology or fuel. A passenger tax is imposed on each passenger the aircraft is actually carrying, while a seat tax is imposed on the number of seats in each aircraft regardless of whether they are filled with passengers or not. Thus, a passenger tax gives the airlines no incentives to reduce the number of flights or to carry more passengers or freight on each aircraft as long as they do not pay for the empty seats. Therefore, a seat tax may have better environmental characteristics than a passenger tax. The environmental performance of both taxes could perhaps be improved if it would be possible to introduce mechanisms to correct for the distance of the flight, e.g. by multiplying a base rate per seat/passenger by the distance between the airports concerned.

40. However, a passenger tax contributes to increase the costs of air travelling. This could have positive environmental effects if some passengers move to alternative modes of transport that pollute less or if demand for air travelling is reduced without increasing demand for other transport services. Besides, both the passenger and seat taxes would avoid the issue of tanking abroad, and could more easily comply with international aviation regulations (see chapter 3).

2.2 Emission reduction options

41. A CO₂ tax on aviation fuel based on the carbon content of the fuel would be the policy instrument most targeted towards CO₂ emissions reductions, and would present the airlines with stronger incentives to reduce emissions compared to a passenger or seat tax. A crucial question to ask then is what effects, if any, should be expected from a CO₂ fuel tax on aviation besides eventually reducing demand for air transport? The following operational and/or technical measures exist (e.g., ECON, 2003):

- *Operational measures.* Operational measures to reduce the amount of fuel burned per passenger-km include increasing load factors, carrying more passengers or freight on a given aircraft, eliminating non-essential weight, optimising aircraft speed, limiting the use of auxiliary power (e.g. for heating, ventilation etc.) and reducing taxiing. The potential improvements from these measures are in the range of 2-6 percent of the amount of fuel burned.
- *Technical measures* A 20 to 25 percent improvement in fuel efficiency is projected by 2015, and a 40 to 50 percent improvement by 2050 relative to aircrafts produced today, through engine improvements and airframe design improvements. Engine efficiency improvements reduce the specific fuel consumption and most types of emissions, however, contrails (that tends to contribute to global warming) may increase. Without advances in combustion technology, NOx emissions may also increase. NOx emissions at high altitudes could contribute to increase global warming.

42. A CO₂ fuel tax of the magnitude imposed in Norway will in our view contribute only very marginally to the implementation of any of these measures.

2.3 Increased tanking abroad?

43. One of the arguments against the domestic aviation fuel tax has been that airlines with international flights could do the tanking in neighbouring countries to avoid paying the tax. This could have consequences for the competitive position for some of the airlines as well as for the potential environmental effects of the tax.

44. According to the Norwegian Air Traffic and Airport Management as well as the Norwegian Institute of Transport Economics, the actual possibilities for tanking abroad are limited⁷. There are costs connected to tanking abroad, since the weight of the aircraft increases, resulting in a considerable increase in fuel usage which would reduce the net savings. It is considered unlikely that the airlines will start using the same aircrafts for domestic and international traffic. Today most of the airplanes are dedicated to shuttling traffic between the main domestic destinations most of the time, and to redirect them to some destinations in neighbouring countries in-between would be inconvenient. The Association of Norwegian Airlines confirms this view. However, the former airline Braathens SAFE (now part of Scandinavian Airlines System) stated that they considered fuelling abroad to be a profitable option⁸. In retrospect tanking abroad to avoid the fuel tax seems to have been limited, which may also be due to the relatively low level of the tax. Thus, higher tax levels might have increased tanking abroad.

2.4 Cost impacts

45. The aviation fuel tax is only one of many charges on air transport. In addition to the air fuel tax, the aviation sector is subject to Value Added Tax (VAT) and various duties related to infrastructure, as well as fees paid to the Norwegian Air Traffic and Airport Management for various airport services.

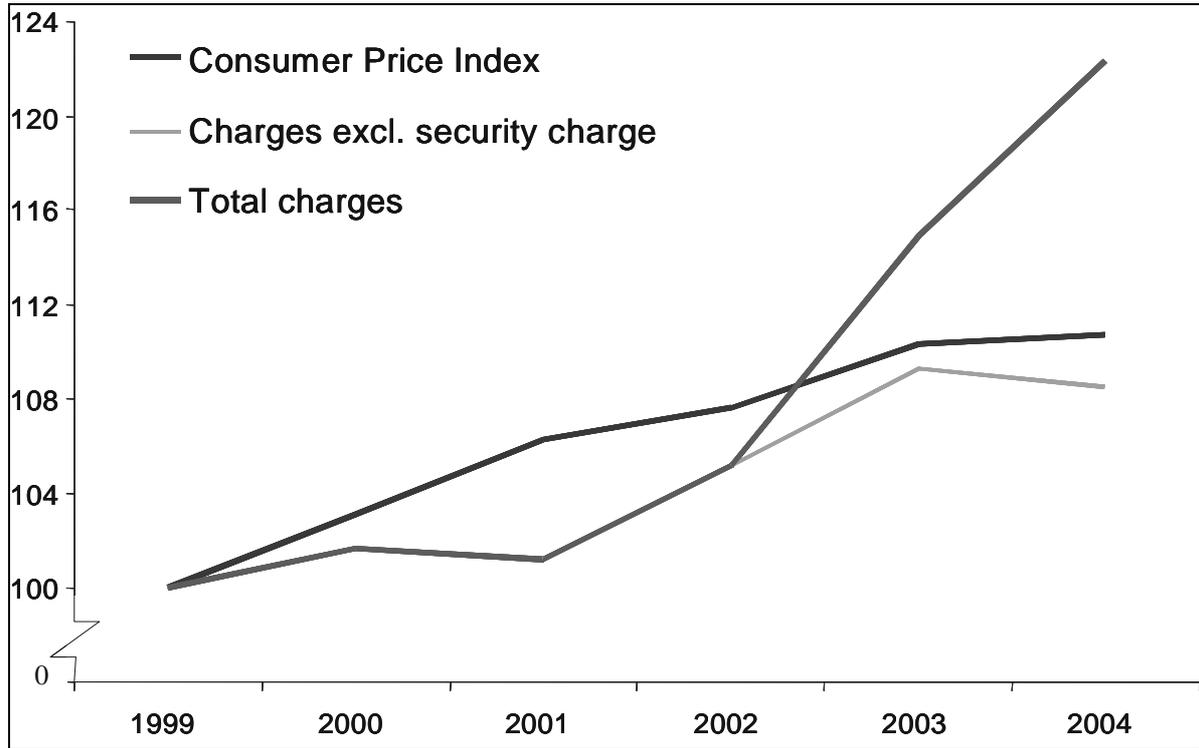
46. Figure 2.1 shows that there have been substantial changes in aviation charges since 1999. Charges related to airport security have increased substantially after 2001.

47. Statistics for the development in Norwegian aviation fuel prices are not available. However, when using current price data for aviation fuel from some US airports for the period 1999 to 2005 as indicators for Norwegian fuel prices, some comparisons could be made. Figure 2.2 indicates that the level of the fuel tax has been very low compared to the development in jet fuel price levels.

⁷ St. prp. no 54 (1997-98); St.prp.no 53 (1998-99).

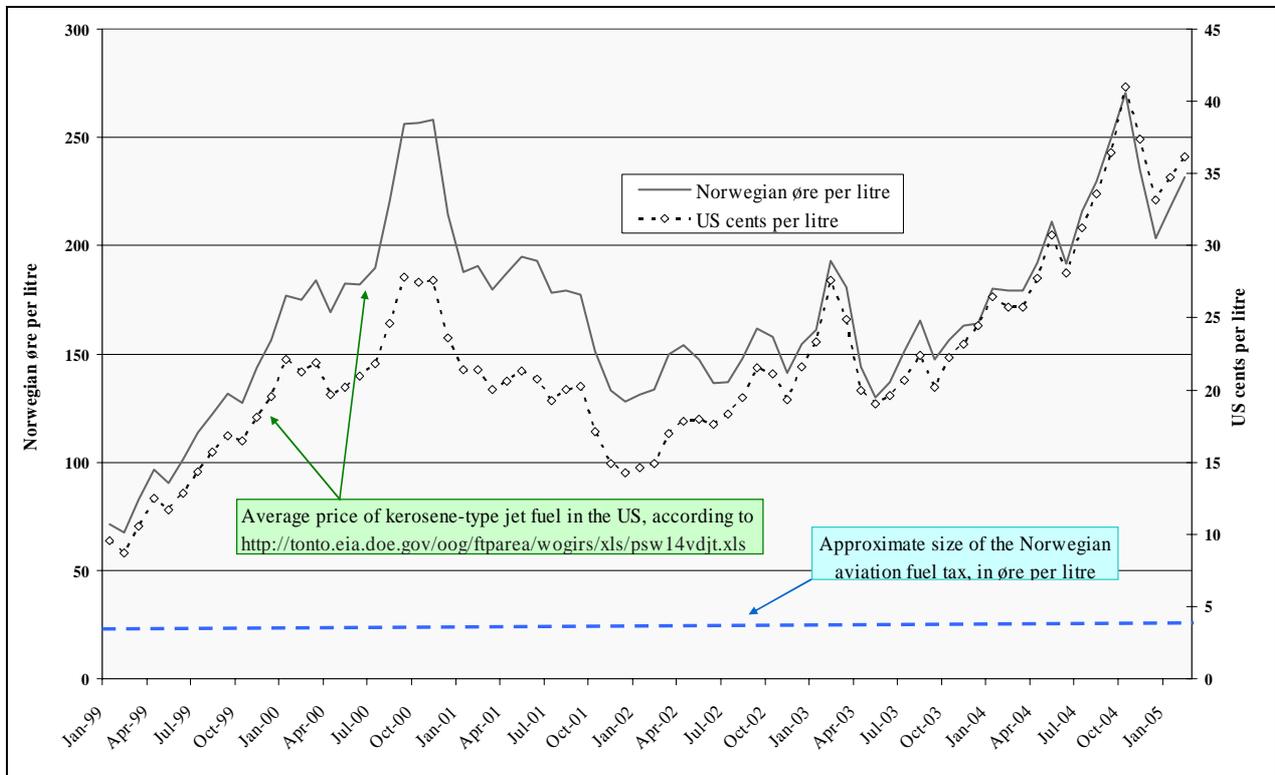
⁸ Letter from Braathens SAFE to the Ministry of Finance, 17 April 1999.

Figure 2.1 Index for the Development in Aviation Charges on “an Average Air Trip” in Norway. 1999=100



Source: ECON (2004)

Figure 2.2 Development in US Kerosene Jet Fuel Prices Compared to the Norwegian Aviation Fuel Tax



Source: US Department of Energy and OECD.

48. ECON (2004) concludes that the authorities have taken into consideration the revenue from the various charges when introducing new taxes in order to assess the total costs for the airlines. When the aviation fuel tax was introduced the additional costs for the airlines were estimated at NOK 180 million/year. The tax on passenger seats was therefore reduced by an equivalent amount. Similarly, when the tax on fuel for international traffic was removed in May 1999, the estimated public revenue loss (NOK 75 million/year) was compensated by a corresponding increase in the seat tax. Furthermore, when the passenger tax was completely removed in 2002, the public revenue loss was only partly compensated through change in the VAT system. The total revenue from the passenger tax increased from around NOK 1,200 million in 1999 to approximately NOK 1,400 million in 2001. However, the change in the VAT system was estimated to increase the costs for the airlines by NOK 300 million/year, implying a tax reduction for the airlines of more than NOK 1,000 million/year.

49. According to the previously mentioned committee that was appointed by the Government to investigate the competitive conditions in Norwegian air traffic, the introduction of the air fuel tax resulted in increased costs for airlines with mainly domestic flights compared to airlines with a significant international traffic.

50. Because of all the changes in the various taxes and duties on air traffic, it is difficult to assess the total cost impacts for the airlines. Moreover, there is disagreement between the authorities and the industry whether the air fuel tax has caused additional costs for the airlines. The Association of Norwegian Airlines claims that the additional costs from the aviation fuel tax have not been fully compensated.

51. In sum, the total level of aviation charges seems to have increased since 2001, mainly due to costs related to security measures. The aviation fuel tax seems to be of minor importance in this picture due to its relatively low level of revenue compared to the other duties.

52. The administrative costs for the Government related to the aviation fuel tax are very limited. In fact, the administrative costs for this sector were not even mentioned in the description of the economic and administrative consequences of the tax reform. One reason for this could be that the aviation fuel tax is part of an already well established overall tax system on all oil-based fuels, implying that the administrative systems for tax collection etc. were already in place when the tax was introduced. The fact that the tax rates vary between products and users does not add significantly to the administrative costs. Few enforcement efforts are required to check that fuel meant for, and taxed as, international flights are not sold for use in domestic flights.

2.5 Impacts on air travel demand

53. Because of the many frequent changes in the various aviation charges and other costs over the years, it is difficult to assess any effects of the aviation fuel tax on demand for air travel. The rather low revenue generated by the fuel tax compared to the revenue from other charges indicates that the fuel tax has been of minor importance for the costs of the airlines and hence also for ticket prices.

54. Air travel is an *income-elastic* commodity, i.e. demand for leisure travelling increases more than the general growth in income. Parts of the air travel market are also relatively *price elastic*. For instance, ECON (1999) estimates the price elasticity for leisure air travel at -1.5 (i.e. the demand falls by 1.5 percent when the price increases by 1 percent), and the price elasticity for business air travel to -0.5 percent. ECON (2004) refers to data from the Norwegian Institute of Transport Economics, which estimates the price elasticity for the overall Norwegian passenger aviation market at -0.65 .

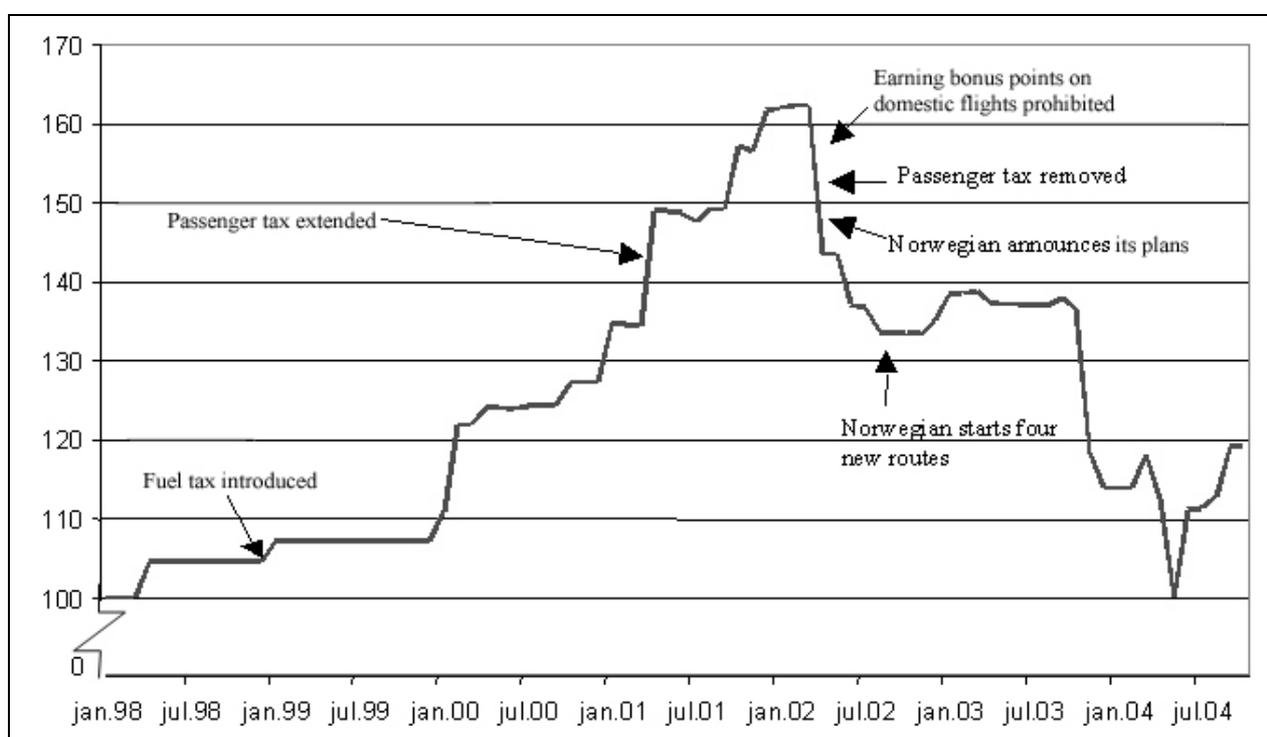
55. Thus, some changes in demand should be expected when prices increase. The Norwegian aviation plan 1998-2007 [St meld nr 38 (1996-97) Norsk luftfartsplan 1998-2007] estimated that the

introduction of the domestic passenger tax resulted in a price increase of between 6 and 33 percent in Southern Norway. Introduction of the passenger tax on international flights was estimated to have reduced the traffic by about 2 percent compared to a situation without the tax.

56. Besides duty changes there have been many other changes in the Norwegian aviation market over the last years. Some of these are plotted in Figure 2.3, showing the evolution of the price of air passenger transport.

57. As can be seen in Figure 2.3, there was only a minor price increase in January 1999 when the fuel tax was introduced, which is not surprising, given the fact that the seat tax was reduced to offset the increased costs from the fuel tax. However, the figure shows a price increase in 2001 when the passenger tax was extended and a drop in prices when this tax was removed in 2002.

Figure 2.3 Price Index for Aviation Passenger Transport. 1998=100



Source: ECON (2004)⁹

58. However, other events have also been important for aviation ticket prices. SAS Braathens was denied to offer passengers bonus points on their domestic routes from July 2002. At the same time, a new carrier (Norwegian Air Shuttle) entered the market and opened four new routes. This has considerably increased the competition in the domestic aviation market. At the same time demand dropped somewhat from 2001 till 2002, but has grown since then. Figure 2.3 shows that ticket prices have fallen dramatically since 2002, even if taxes have increased considerably during this period. Over the last couple of years, aviation fuel prices have also increased due to increased crude oil prices. This has dramatically reduced the airlines' profit margins. However, it has also stimulated cost reduction programmes in the companies. With this in consideration an approximate NOK 100 – 200 million per year of revenue from aviation fuel tax seems to have marginal importance.

⁹ The index is based on the price development of "Aviation passenger transport" which is part of the official Norwegian Consumer Price Index.

3. LESSONS FOR OTHER COUNTRIES

59. Taxes on air transport are almost non-existent in most countries. Today Norway is one of only a few countries that have aviation fuel taxes. In this chapter we seek to draw some lessons that other countries could learn from the Norwegian case. We will discuss whether there were special circumstances that facilitated the implementation of such a tax in Norway compared to other countries, or whether there is scope for other countries to do likewise.

Difficult to implement a fuel tax on international aviation

60. The Norwegian experience shows that a CO₂ or any other charge on aviation fuel used for international flights would be in violation of existing bilateral air service agreements (ASAs) between countries. There are more than 2,500 bilateral ASAs around the world, and the vast majority of these include the reciprocal exemption from all taxes levied on fuel for international flights (ECON, 2003) based on recommendations from the International Civil Aviation Organisation (ICAO). Revising all or most of these ASAs would be a lengthy and cumbersome process even if most countries agree, since they are subject to Parliament ratification. However, if two or more countries agreed, it would of course be possible for them to renegotiate this part of their ASAs.

61. In order to avoid violating these agreements, the revenue from the taxes could perhaps be recycled according to some parameters not directly related to the tax, for instance according to passenger-km or tonne-km produced by the carrier. Ideally, to avoid carbon leakages and competitive disadvantages most industrialized countries should agree on a common taxation scheme. Today only a few countries seem to be in favour of fuel taxation of international flights, even if some countries argue in favour of such taxes to finance development aid, etc.

CO₂ emissions allowance trading seems to be a more plausible option for international flights

62. Greenhouse gas emissions from international aviation and shipping are not part of the commitments under the Kyoto Protocol. It is left to ICAO to consider how the limitation of emissions from aviation should be pursued. An emissions allowance trading system for emissions from aviation, linked to an international emissions trading system for land-based sources, could be a worthwhile option to pursue (ECON, 2003). Allocation of allowances free of charge would contribute to avoiding severe competitive distortions among carriers and should ensure compliance with the ASAs. However, treating existing and new carriers equally when allocating allowances could be difficult. Besides, if the amount of allowances allocated free of charge is substantially reduced compared to existing or estimated future emissions, this might be considered violating the ASAs since a considerable amount of allowances would have to be bought in the market. Still, it should in our view be possible to design an emissions trading system that have positive marginal environmental impacts, are in compliance with the ASAs and do not cause severe competitive distortions, for instance along the lines the EU is designing its emissions trading system for 2005-2007. According to the argumentation against the Norwegian aviation fuel tax, the air carriers may more willingly accept emissions trading than fuel taxes.

Fuel taxes on domestic flights are an option....

63. The Norwegian experience demonstrates that fuel taxes on domestic flights are indeed an option. Such taxes should treat all air carriers equally, and should particularly avoid discriminating against foreign carriers. However, fierce opposition against the tax from the airlines can be expected. Such opposition could be avoided by pursuing any of the following actions:

- Impose a relatively low tax rate at the outset;
- Reduce other levies or duties on air traffic;
- Redistribute the proceeds from the fuel tax among the air carriers according to some pre-defined rules, even if this would in effect eliminate most impact of the taxes on ticket prices, and thus eliminate any demand impacts.

64. However, these actions are not an option if the tax is imposed for fiscal reasons, for instance to raise revenue for development purposes.

65. For members of the European Union, the obstacle for an aviation fuel tax on domestic flights posed by the Mineral Oil Directive is no longer present due to the “Council Directive 2003/96/EC of 27 October 2003 restructuring the Community framework for the taxation of energy products and electricity”. This directive provides for a mandatory exemption from the harmonised excise duty for energy products supplied for use as fuel for the purpose of air navigation other than in private pleasure-flying. However, it also introduced provisions which allow Member States to tax aviation fuel for domestic flights and, by means of bilateral agreements, fuel used for intra-Community flights. In such cases, Member States may apply a level of taxation below the minimum level set out in the directive. Thus, this directive is very important for EU member states’ potential to impose domestic and eventually also intra-Community aviation fuel taxes.

...but should be carefully considered in order to avoid tanking abroad

66. Tanking abroad does not seem to have been a particular problem in Norway due to the inconvenience of tanking abroad for airlines primarily operating domestic flights. Relatively low potential net gain from tanking abroad has also been an important factor. However, this may not be the case for other countries if distances to foreign airports are relatively short compared to the potential gains from tanking there, and where route patterns more easily allow for this. Therefore, the prospects of tanking abroad should be carefully considered before imposing a fuel tax.

Domestic CO₂ fuel taxes should be introduced as part of a broader tax reform strategy

67. In Norway the introduction of a CO₂ fuel tax was part of a tax reform to impose a more cost-efficient CO₂ tax regime in order to contribute to the fulfilment of the emissions obligations of the Kyoto Protocol. This made it somewhat easier to achieve the airlines’ acceptance of the tax. If considering a CO₂ tax, other countries should obviously strive for the broadest possible tax base in order to ensure cost-efficient emission reductions and relatively smooth implementation.

Would a seat or passenger tax be easier to implement?

68. The Norwegian taxes on airplane seats and passengers on international flights were never questioned regarding their compliance with the Chicago Convention and/or the bilateral ASAs. They do not appear to be in violation of the ASAs. In our view however, the possibility that such taxes are not in

compliance with the Chicago Convention cannot be ruled out, even if this went unquestioned when these taxes were imposed in Norway.

69. Thus, seat or passenger taxes could be easier to implement according to international laws and regulations. Furthermore, such taxes would not stimulate tanking abroad. A seat tax could also have rather positive environmental effects. However, these taxes were rather unpopular in Norway, and perhaps more unpopular than the fuel tax. Thus, the issue of imposing a seat or passenger tax should be carefully considered, also in relation to the purpose of the tax and the situation in the aviation market.

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