Study of Economic Effect of Light Dues

Table of contents

Executive Summary

Chapter 1: Introduction and Background

MDS Transmodal, in association with DTZ Pieda Consulting, were commissioned by the Department for Transport (DfT) in September 2003 to carry out a study of the economic effect of light dues in the United Kingdom.

The aim of the study was to provide an independent and objective analysis of the economic impacts of light dues at two levels:

- Direct impacts on shipping lines, ports and owners of fishing vessels and pleasure craft;
- Wider economic impacts on the regional and national economy in terms of value added, employment and environmental impacts.

The overall approach to the study has, as far as possible, been analytical, making use of as much quantitative evidence as possible to reach substantive conclusions. This was particularly important given that light dues tends to be a controversial issue within the ports, shipping, fishing and pleasure craft sectors. For this reason our approach has concentrated on the development of a financial model of the light dues payment structure, based on statistical databases and cost modelling, supplemented by a consultation exercise.

Five scenarios were agreed with the Steering Group. These scenarios reflect the following assumptions which, in turn, affect the proportion of the total GLA costs that could be recovered from particular types of potential users of the navigational aids provided:

- The UK fishing industry should not be expected to make a greater contribution than it currently makes; this reflects the views of almost all consultees;
- The owners of pleasure craft over 8 metres only should be expected to make a contribution of Â£100 per annum (about the cost of a television licence or the road fund licence for a small car);
- All exemptions could be removed and charges could be levied on ships passing the UK without calling at a GB or Irish port.

The scenarios are described in outline below:

Scenario	**Description**
Scenario 1: Status Quo	Existing split of light dues between commercial shipping, tugs and fishing craft.
Scenario 2: Abolition of Light Dues	Abolition of light dues to be replaced by funding from general taxation.
Scenario 3: Removal of Exemptions	Existing split of light dues between commercial shipping, tugs and fishing craft, but most existing exemptions removed on commercial shipping movements and Government vessels and the scope of the system is extended to include commercial shipping passing the UK but not calling at UK or Irish ports.
Scenario 4: Pleasure Craft	Pleasure craft over 8 metres in length charged Â£100 per annum.
Scenario 5: Combined Scenario	Combined effect of removing most existing exemptions on commercial vessels and Government vessels, including vessels passing the UK without calling at a GB or Irish port within the scope of the charging structure and 120,000 pleasure craft are charged Â£100 per annum.

A series of sub-options have also been tested to examine the impact of changing the basis for charging light dues, from net tonnage to draught for example.

Chapter 2: The Existing Payment Structure versus Abolition

Our overall conclusion on the routing impacts of the abolition of light dues is that a significant impact is unlikely. The most likely impact, given the proportion of port costs levied as light dues on cruise ships, is that a few additional way calls might be made in the UK by foreign-based cruise vessels.

All deep sea shipping consultees believed that the major direct impact of abolition would be a reduction in the costs to the shipping lines. Some of these cost reductions would be passed on to shareholders through dividends, but most would either be re-invested in ships and port facilities or would have to be passed onto shippers through lower freight rates as a consequence of competitive pressures. Ultimately, therefore,

the UK economy would benefit through marginally lower freight rates for UK importers and exporters.

Abolishing light dues is not expected to change the level of regional economic activity of the three sectors considered - merchant vessels, fishing vessels and cruise ships. However, there is expected to be an impact on the wider UK economy as a result of reduced costs to merchant vessels and fishing vessels.

For reduced costs on merchant vessels, the impact on the UK depends upon the proportion of the savings that are passed onto the UK businesses that are importing and exporting goods. The maximum impact would be if all of the savings were to be passed on to UK businesses. Even in this situation, the impact on the economy is not significant - a reduction in costs to UK businesses of approximately 0.003% of total costs.

Closer analysis of several sectors that are particularly reliant on imports and exports (steel industry and the car industry) indicates that although the impact is higher, the maximum level of impact still remains significantly below 0.1% of total costs.

It is possible that, at the margin, the UK might secure a few additional calls from cruise ships as a result of the abolition of light dues. Each additional cruise way call is estimated to support one full-time job, although it is far from clear how many additional calls would be made as a direct result of abolition of light dues.

Although most consultees and members of the Advisory Group would not agree, there is an argument that some ports may be able to secure a proportion of the savings to shipping lines following any abolition of light dues, and thereby assist in the funding of new or enhanced infrastructure.

Within the fishing industry, the primary impact will be on boat owner incomes. Modelling the increase in boat incomes as a result of abolishing light dues indicates that the overall impact on the UK economy, across all sectors, is estimated at 11 FTE jobs, with the main incidence on employment in Scotland. Output and GVA would also be expected to increase by Â£0.8m and Â£0.5m respectively.

Chapter 3: Economic Impact of Removing Exemptions

Analysis of the removal of all temporary exemptions except those required to ensure maritime safety and to protect the marine environment or for voyages within harbour limits, shows that this would provide an additional 1.1% of light dues or some Â£0.8 million.

Our analysis, based on a considerable number of assumptions, indicates that Government vessels (UK and foreign), which is the most significant permanent exemption, could contribute a further Â£1.3 million.

Vessels passing the UK without calling at UK ports (based on traffic through the Dover Straits only) could have yielded approximately Â£4 million in light dues for one month in 2003. Given the lack of a year’s data with which to carry out the required analysis, we can only produce a rough estimate of the annual amount that could, in theory, be levied of Â£32.5 million.

In terms of the wider economic impacts, the maximum anticipated impact of removing exemption on ships entering ports for repairs or bunkers (based on 2002 data) could be the loss of a total of about 50-70 FTE jobs within the UK economy, primarily in the South West economy.

We have assumed in our analysis that some bunkering activity would be lost to the UK economy and that this would undermine the economics of the bunkering facilities leading to their closure. We have also come to the view that, on balance, the removal of the exemption on calls for ship repair and conversion would not lead to a significant reduction in activity. However, it is possible that some potential dry-dockings might be lost and if this was regarded as being a particular concern for Government, then a reduced light dues charge could be considered for both ship repair and bunkering port calls. A charge of, say, 25% or 50% of the full rate would reduce the potential economic impact, while ensuring that all commercial voyages are charged for use of navigational aids provided by the GLAs.

Chapter 4: Economic Impact of Charging Pleasure Craft

There is no official source of statistics on the number of pleasure craft owned by UK residents or moored or used around the coastline of the UK and there is no compulsory register of pleasure craft. Unofficial estimates of the number of pleasure craft vary considerably. In order to produce estimates of the number of pleasure craft that could be expected to make a contribution towards the cost of the navigational aids provided by the GLAs, we have developed two sub-scenarios based on two sources of data:

Sub-scenario 1: pleasure craft over 8 metres and recorded on the Register of Shipping and Seamen Part III

Registration is required on this register to allow a vessel to visit a foreign harbour or to secure a mortgage on the vessel. The register is not compulsory and so cannot be regarded as necessarily providing an accurate figure for the number of craft. However, some 29,500 pleasure craft over 8 metres are included on the Part III register. The 8 metre cut-off for the length of pleasure craft above which a charge could be levied is an assumption for the purposes of our analysis and this assumption implies that vessels of more than 8 metres in length are more likely to leave harbour limits and use the navigational aids provided by the GLAs.

Sub-scenario 2: Number of pleasure craft from a British Ports Federation Survey

This survey estimated the number of vessels that could put to sea and use GLA navigational aids, based on a survey of ports and harbours carried out by the then British Ports Federation in 1989. Although this survey is now very dated it appears to be the only survey carried out that has sought to estimate the total number of pleasure craft in UK ports that might use GLA aids. The estimated number of craft in 1989 was some 120,000 and the survey also provided an analysis of the number of craft by region.

Based on the assumptions described above, the light dues collected would amount to some Â£2.95 million in Sub-scenario 1 and Â£12.0 million under Sub-scenario 2. The analysis for Scenario 4 overall suggests that the introduction of a charge of Â£100 for light dues on pleasure craft is unlikely to result in a reduction in the number of people owning pleasure craft in the UK. The main impact would be the result of reduced expenditure by boat owners as a result of a reduction in disposable income.

We understand from Trinity House that following the decision to charge light dues on UK registered fishing craft over 10 metres in length, the number of craft just under 10 metres increased over time. If a charge was levied on pleasure craft, it is possible that a similar effect might be observed in the medium to long term although we would not anticipate this effect being significant if the charge was in the region of Â£100 per annum.

Modelling the wider economic impacts of the two sub-scenarios indicates that charging pleasure craft would result in reduced employment due to decreased consumer expenditure in the economy. For sub-scenarios 1 and 2 this would amount to a loss of 53 FTE jobs and 216 FTE jobs respectively. The main incidence of the impact would be on the economies of the South East and South West.

Chapter 5: Amending Existing Structure

This chapter discusses possible ways to amend the existing structure, if we assume that a cost recovery system will remain. It includes the testing of the following sub-options for charging commercial vessels:

- Change in number of chargeable voyages for commercial shipping to 12 and 50;
- Change in maximum tonnage cut-off to 20,000 NT;
- Charge per arrival for commercial vessels;
- Inverse power rule for tonnage;
- Based on draught of vessel, at a rate per metre;
- Based on per tonne of cargo loaded & discharged;
- Based on GT, rather than NT.

Most of the sub-options modelled have the effect of changing the structure to only a limited degree, generally by "flattening" the structure, but the flat rate per call sub-option, which increases the charges on frequent calling short sea RoRo vessels has a more dramatic effect and could lead to some switch of traffic from the Dover Straits to the Channel Tunnel.

Scenario 5 takes into account the removal of some temporary exemptions on commercial vessels, includes vessels passing the UK without calling at a GB or Irish port within the scope of the charging structure, and assumes a contribution from pleasure craft and Government-owned vessels. This would reduce the amount levied on existing commercial shipping by about 45%.

Chapter 6: Conclusions

The existing light dues charging system is not a "pure" user pays system in that it is not possible to define who is a user and how much use is made of navigational aids provided by the GLAs. Furthermore, payers of light dues are not charged to use particular navigational aids, but are making a contribution towards the GLAs' costs, based in general terms on their perceived revenue-earning capacity. The existing system is therefore, in reality, a cost recovery system from some, if not all, potential users.

In addition, larger vessels tend to pay significantly higher light dues per vessel because of their greater net tonnage and their less frequent calls. The most extreme example is provided by the deep sea container vessels. The larger container vessels (over 3,000 TEU) paid 28% of the total light dues levied on ship movements in 2002 and paid light dues on about 85% of port calls. Their average charge per actual call (by size group) was almost Â£9,000 (3000-6000 TEU) or Â£13,000 (over 6000 TEU). At the other extreme, the smaller RoRo vessels (under 30,000 GRT) paid only 4% of the total light dues levied on ship movements in 2002 and paid light dues on only 1-2% of port calls. Their average charge per actual call was between Â£16 and Â£42.

These issues can make the existing system appear quite arbitrary and inequitable in its application to many individual payers of light dues.

We understand that Belgium also levies charges on shipping for use of its navigational aids, but the sums involved are low by comparison with light dues and presumably this is due to the length of Belgium's coastline. France, Germany and the Netherlands fund their navigational aids from general taxation. Given that UK commercial ports compete for traffic in some sectors with Continental ports in North West Europe and navigational aids outside port limits are generally funded out of general taxation on the Continent, it follows that there is some distortion of competition (at least in theory) between UK and Continental ports as a result of the light dues system.

In order to test the likely economic impact of the existing light dues charging structure, we have compared it with the position if light dues were abolished. The evidence we have collected suggests that abolition would have little impact on the routing of cargo, apart from a few possible additional way calls by cruise ships in the UK. This implies that the existing charging system is unlikely to be having any significant direct impact on shipping line behaviour and that there is unlikely to be any significant distortion of competition between UK and Continental ports.

Similarly, the analysis of the wider economic impacts suggests that the most likely impact would be a reduction in costs for shipping lines and fishing craft owners. If all the reduction in costs for shipping lines were passed onto UK businesses it would lead to a 0.003% reduction in their costs. There would also be relatively minor impacts on the UK economy from the abolition of light dues on fishing craft. Much would depend on the final incidence of payment of light dues, but as a significant proportion of all light dues are paid by containerships calling at UK deep sea container ports, it is possible that at least some of the reduction in light dues on these vessels would, in the future, provide the ports with the scope to increase charges to pay for any new deep sea container port infrastructure. That would depend upon the competitive environment in that sector, and the relationship between supply and demand.

The results of the face-to-face consultation exercise carried out for this study generally confirmed the results of the DfT's written exercise in 2002. There is little apparent consensus among the shipping, ports, fishing and pleasure boat industries on how, if at all, the existing system should be amended. There is little consensus even among the shipping sector as to how the existing system could be improved. The only issue upon which all sectors can agree is that the current system is (or would be) inequitable as it is (or could be) applied to them and therefore should be abolished with the GLAs being funded out of general taxation.

A major issue emerging from the consultation exercise for some shipping lines is that of "inequity" in the existing charging structure between different types of commercial vessel (i.e. between owners of large commercial craft making only infrequent calls and short sea vessels making frequent calls at UK ports) and that some potential users of the aids (principally pleasure craft and Government vessels) are not making a contribution towards their costs.

Extending the scope of the scheme to include pleasure craft at a level of Â£100 per vessel per annum could (assuming collection costs are sufficiently low) generate some additional funds for the GLF, thereby reducing the amount paid by commercial shipping and without significant economic impacts on the marine leisure industry. Similarly, removing most of the existing exemptions is unlikely to have a major impact on overall economic activity, although the UK bunkering industry could be seriously affected by the removal of the exemption on calls by vessels for bunkering only and it is possible that the UK ship

repair industry would lose some work as a direct result of the removal of the exemption. However, given the relatively low proportion of light dues of the total costs involved, it is most likely that the ship repair industry would have to accept a lower budget for ship repair work on individual contracts.

In theory, vessels passing the UK could provide a significant proportion of total light dues, although any figure can only be notional in that the light dues could not be collected under international law and would be very difficult to collect in practical terms. This would mean that, if a policy decision was made to secure a notional contribution on behalf of these non-paying potential users of the navigational aids, the contribution would have to come from Government through general taxation.

Based on the results of our modelling of various sub-options, a flattening of the existing structure to reduce the burden on the larger vessels could be achieved by a number of means, but a structure involving a flat rate per call is likely to lead to some modal shift (particularly to the Channel Tunnel) and could, at least at the margin, lead to an increase in lorry mileages in the UK as it would affect the viability of coastal and short sea shipping.

The full study is available as a PDF download at the foot of this page.