Economic Welfare

and

Maritime Economics

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by

Richard Goss

Master Mariner, MA, PhD, FRINA, FNI, MRIN, FRSA

Professor Emeritus in the University of Cardiff
Introduction

When I was 16 I was a cadet on a training ship. One day I was told to help the ship’s carpenter. He was a very experienced man and knew better than to let me do very much: but I could fetch things for him, hold them down and watch as he applied his skills. I recall that when he made some disapproving remark about “professionals” and “amateurs” I asked him what was the difference in his line of work. He said: “An amateur is someone who thinks he can saw straight without a pencil line: a professional is someone who knows he will never be that good”.

In this paper I would like to discuss some aspects of maritime economics and to demonstrate how we may employ the standard concepts of economic welfare. Most of these might have been used, and to the benefit of all those concerned, long since – for none of them are new. It would be interesting to speculate on why they have not been used; perhaps it is the isolation in which so many shipping people work – I do not mean isolation from each other, but isolation from policy discussions in other industries and even from other modes of transport. Perhaps the reason lies in the idea that “shipping is special”; after all, it has its own statistics, eg of gross tons, with no parallels in other industries, and which it uses to indicate safety: though other industries use the overall number of deaths and injuries. But I will leave that speculation to others, save that I think it indicates a lack of proper professionalism.

Economic welfare consists of the sum of consumers’ surpluses and producers’ surpluses plus or minus any relevant externalities. We cannot measure the absolute size of these but that does not matter because we are concerned, for all practical purposes, with increments and decrements in them. In other words, we may work in terms of the familiar concepts of marginal utility and marginal costs, and distinguishing between the short run position (with such constraints as the number of ships available) and that of the long run (where these constraints are relaxed).

We may, therefore, begin by considering:

The organisation of sea transport

There is widespread agreement that sea transport is best organised through free markets. In technical economic terms, this means that economic welfare is maximised by equating the marginal utilities of the consumers with the marginal costs of the suppliers in both the short run and, when
the necessary equilibrium has been reached, in the long run. Before this equilibrium is reached there may be a surplus of shipping. Freight rates will then be lower, the higher-cost ships will be laid up as no longer profitable and fewer new ones will be ordered. Conversely, when shipping booms there will be fewer ships laid up and more ships will be ordered. The trade press often describes this in vivid terms. Indeed, it has been doing so very recently.

From the point of view of ship operators, the trouble with this is that, most of the time, there is a good deal of surplus shipbuilding capacity available somewhere in the world, so that, usually, incipient ship shortages are filled quite quickly. At present, there is less of this (except in higher-cost areas like Western Europe), so many shipbuilders have long order books: but all past experience shows that this will not last. By contrast, once ships are built then they are often kept for a long while, sometimes even in lay-up berths. It follows that:

**shipping booms tend to be short**

and

**shipping slumps tend to be correspondingly long.**

I shall return to the practical implications of this as I finish. I shall also produce some policy recommendations.

Most countries, however, consume far more shipping services than they produce so it is the consumers’ surplus which is important to them. This is particularly true of Britain. As a great trading nation we need the most efficient shipping services available; and whether they are provided by ships that are registered in Britain, owned in Britain or manned by British seamen, is not relevant.

For some other countries the position is reversed. Norway is a highly successful shipowning nation, often investing its capital wisely. Another example is the Philippine Republic. This does not have a large fleet but it is a highly successful supplier of seamen, thus taking advantage of its factor endowment in ways which are eminently sensible but quite the opposite of those once advocated by the staff of the United Nations Conference on Trade and Development. China is developing in both directions and with great vigour.
We may find support for these theoretical ideas of free markets by pointing to the utter failure of the shipping policies of the former Soviet Union; and to the much greater success of Chinese shipping after the economic reforms in that country. Theory and recent history combine, therefore, to confirm that this is, in general, the right policy to adopt.

However, such simple analyses may be so attractive that their very elegance seduces our attention from the many important exceptions. I now propose to discuss these, but in terms familiar to professional economists – though, as I have indicated, frequently not to those engaged in sea transport.

The arguments against laissez-faire

1 Defence

This is an old argument, going back to Adam Smith. He asserted that ‘defence is greater than opulence’ and concluded that the protective measures provided by the Navigation Acts should remain. Later, this was challenged by John Ricardo, who pointed out that life and work were quite different on merchant ships; so are crew sizes, so is the equipment and so is the form of discipline. So are the ships and, these days, so is the urgency of getting hold of them. Moreover, if you take an admiral (with due respect, any admiral will do) and ask him whether he would prefer to have some large sum of money devoted to warships or to supporting merchant ships, he will always choose the former. When conflict comes, he will often be content with using merchant ships that are foreign-owned, registered and manned, though preferably from allies, provided that they are of the right types and available at the right time. It follows that supporting merchant shipping on defence grounds is really an argument for having a reserve fleet of rather specialised ships. Some countries, such as Britain and the USA do just that; but we should recognise that it is no longer a good reason for supporting ships in general.

2 Public Goods

Public goods and services are those which are unlikely to be supplied sufficiently or at all by the private sector. Standard examples, to be found in most economic textbooks, are defence, law and order, navigational aids like lighthouses and education. There are no policemen at sea, so it can be
difficult to maintain law and order. The proliferation of piracy, in the Malacca Straits and off the coasts of West Africa and South America is an example. Ships may be boarded by well-armed (and apparently well-trained) young men, safes rifled and property stolen. Sometimes whole ships are stolen, re-named and their cargoes sold before further crimes take place. Sometimes people are murdered; often they are put in fear of their lives. There are opportunities here for some of the world’s navies and especially if they act in co-operation. National susceptibilities may need to be modified and especially where police, customs and other officials are corrupt or involved in these activities themselves.

Certain shipping companies have been deliberately established so as to defraud the banks financing them, the shippers who send their cargoes and the crews they employ. My colleague Professor Couper has written a book about such matters. When a ship is old and not worth repairing it may simply be abandoned, together with the crew. The owner makes himself untraceable so that a port authority may find itself with a sinking ship and the crew may find that they have to live on charity. This is so common that the International Transportworkers Federation and the Mission to Seafarers now have standard procedures for dealing with it. The international web of responsibilities is difficult to trace, some maritime countries are notably unhelpful and prosecutions are rare.

I have seen many statements put out, usually by interested parties, to the effect that light dues, which are charged on ships entering some countries but not by others, ought to be abolished. There is an extensive literature on public goods, and some of it is about lighthouses, but I have never seen references to it in any of these statements. Today, of course, other navigation aids, like GPS are relevant, though it is important to bear in mind that any competent navigator will check his position by several different means. Otherwise, his ship may go aground, as the Royal Majesty did in 1995, some 17 miles away from where it ought to have been. Other public goods may include nautical training and education, since well-trained people may be actively sought by competing firms who have not contributed to the costs of training. I remain surprised that people advocating policy changes on behalf of shipping should not strengthen their positions by employing these concepts.

3 The balance of payments

It has sometimes been claimed that shipping has some particularly beneficial effect on a country’s balance of payments and that this would justify some fiscal favours. It is true that the whole of the
net output of shipping may be regarded as benefitting its balance of payments. But there are two reasons why this is a dangerous argument. First, if it were sufficiently true for one country to justify some fiscal support then it must presumably be true for competing countries. Some kind of competition may then ensue, perhaps even extending to a subsidy race. Secondly, a capital-intensive industry with, much of the time, chronically low profits, cannot cover the opportunity cost of the resources involved. It may, therefore, be desirable to consider the net output of shipping minus the opportunity cost of resources; if profits are low then it is likely that the result is negative. Any assistance to the balance of payments is therefore correspondingly expensive.

Moreover, it is not generally wise to use long-term investments, even if they are likely to be profitable, to deal with some essentially short-term problem like that of a balance of payments crisis. Fortunately, we have heard less of this since the Rochdale Committee’s report of 1970.

4 Externalities

Externalities are those results which are outside, or external to, the financial accounts of a decision-maker. Standard examples are pollution, congestion, safety and managing those resources which are held in common – like the oceans, their fisheries and prospecting rights for minerals like oil, gravel and aragonite.

In the last few decades, therefore, numerous international arrangements have come into force to limit pollution in various ways, mostly under the aegis of the International Maritime Organisation. They have not always worked as well as they should; but things are improving. Safety rules have been enhanced, not least by the acceptance of a new and logical manner of setting the forms and levels of safety called Formal Safety Assessment, including cost-benefit analysis. Shipping is thus beginning to employ scientific techniques long used elsewhere. Since I have spent some 40 years arguing for this, I am delighted: but I have to say that it could have been done long since.

However, this is obviously not enough, since regular reports show that significant numbers of ships are detained, sometimes for long periods, because of safety defects. They may not have sufficient charts, the pumps may not work, the lifeboats may not be in good order; and so on. I think it is important to appreciate that:
such unsafe ships have effects throughout the whole shipping industry.

Because such deficiencies enable the worst companies to lower their costs, they affect the level of freight rates and therefore the better companies. I am often surprised that this simple argument is not more widely appreciated.

It is likely that maritime safety will be further enhanced by the attention being paid to seafarers – often under the curious title “human factors”. In delivering the keynote speech at a recent seminar of the Seafarers’ International Research Centre (SIRC), at Cardiff University, Mr Alan Gavin of Lloyd’s Register announced that their focus had changed from engineering aspects of ship design to taking ‘a broader view of the human element’. In addition to their supporting SIRC this can only mean using the social sciences – another idea which I have been supporting for a very long time. Perhaps Lloyd’s Register, which is one of the major statistical sources for world shipping, will publish death rates for seafarers, and not just the gross tonnages or the number of deaths caused by total losses of ships. We have world-wide figures for deaths in aviation. Why not for shipping?

A year or so ago I was writing a paper about maritime safety for a meeting of insurance people and sought assistance from the Chairman of Lloyd’s Register. Although he had no access to overall death rates (as I have just said, there are no figures for total deaths in sea transport) he nevertheless produced figures leading to the conclusion he wanted, namely that shipping was very safe. However, he achieved this by concentrating on deaths of passengers:

he just left out all the sailors.

He thus omitted the 44 deaths which took place on the Derbyshire and about 200 others which occurred when other bulk carriers were lost. It seems likely that he left out a few thousand others, killed on other types of ship. When I was at college I was taught to call this the ‘gee-whiz’ approach to statistics. I sent him a copy of the paper in which I presented these criticisms: but he never answered. I find this lack of response most disappointing, and especially from one of the world’s leading classification societies, a major source of maritime statistics and well-known for the high quality of their technical expertise.

Many people have claimed that “80% of ships’ accidents are caused by human factors”. The figure is surprisingly constant. Do all of these human failures take place on ships? If they do, why is the
management always perfect? Given the concentration on engineering and physical sciences, and the corresponding neglect of the social sciences, is this anything more than a politically convenient way of blaming sailors? If all of the 80% do take place on ships, who causes the other 20%? Surely a structural failure, or a missing fo’c’stle head and inadequate hatch covers, as we now know to have been the case on the _Derbyshire_, is the responsibility of someone? A less defensive attitude, would therefore be welcome; and, as I have said, it is beginning to appear.

One aspect of externalities lies in managing the maritime commons, like fisheries. It is becoming increasingly obvious that existing policies are not doing sufficient to prevent over-fishing. Now, I like eating fish as well as the next man, but I would like my children and grandchildren to be able to have it too. The best way seems to be the New Zealand policy of auctioning transferable licences, so that both primary and secondary markets appear. Fortunately, an extensive literature has developed on this subject, mostly from academic sources: unfortunately, many policy-makers do not seem to be aware of it.

5 Consumer protection

Mentioning this topic may surprise some, but there is no reason why shipping should be exempt. The terms of many bills of lading are so one-sided that a judge once commented that they seemed to relieve the carrier of all duties except that of accepting the freight. In general, there is no guarantee that the ship will sail on the advertised date or at all, that it will go by the shortest route without deviating; and there are no arrangements for compensation if it does. No shipping conference, or line, publishes its punctuality record, nor its record for delivering cargo undamaged. Yet we find that railways do, and so do airlines. When we have a long and practical experience of the working of competition, and find it inadequate, then public authorities may step in.

6 Competition Policy

Since WWII most countries have developed successful competition policies. Many thousands of cartels, monopolies, price-fixing and market-sharing agreements and many other arrangements to restrict competition have been abolished. Although the participants usually predicted chaos would result, there is not one example of this taking place. The usual result has been some re-structuring
of the relevant industry, usually with the more-efficient firms expanding and the less-efficient ones contracting or closing. Thus the economy as a whole becomes more efficient.

It is therefore welcome that the European Union is considering whether the exemption given to shipping conferences should continue and, if so, on what basis. The standard arguments, that shipping conferences provide price stability and do not lead to large (average) rates of return were also true of many other long-forgotten restrictions, like resale price maintenance. Arguments about efficient timing of sailings, so as to avoid duplication and bunching, seem to be regarded as much less important than the Rochdale Committee considered them to be. Questions of ‘postalisation’ – the charging of uniform rates between whole ranges of ports, despite differences in cargo-handling costs, turnaround times and steaming distances – and the lack of peak/off-peak pricing might also be considered.

On the other hand, it might also be argued that, in the absence of effective sanctions, these arrangements are already breaking down, with many lines operating outside conferences and some of those within paying less attention to the tariffs and more to their own business advantage. The trade press reports such frequent shifts of allegiance that it is very difficult to remember who is supposed to be co-operating with whom. There seems, therefore, to be rather more competition than before; and there is still no sign of chaos.

7 Natural monopolies

The economies of scale inherent in modern cargo-handling techniques means that, at many ports, there is only one operator of a container or a bulk-handling terminal. In Britain, Felixstowe is an example. However, this is in competition with other British ports like Southampton and Tilbury as well as with those on the Continent. We have a pretty good internal transport system so, in Britain, therefore, this may not matter too much.

Elsewhere, however, there are genuine problems. Consider, for example, the case of a mid-oceanic island, like Bermuda, Madeira or Mauritius, where there may be sufficient cargo for only one container terminal. Or that of Colombia, where Puerto Bolivar has a coal-loader which can handle up to 16,000 tonnes per hour and has handled 60,000 tonnes per day. This is only one of many instances around the world where there is room for only one operator in a port and, consequently, no
competition – except with other ports and other countries. There is room here for a number of interesting studies, including the deliberate use of serial competition, in which the monopoly is recognised and opportunities to operate it are opened to competitive bidding at intervals. Since there is an active second-hand market in, for example, container gantries, these intervals may be much shorter than the physical life of the equipment. The technique works in other industries: why not in cargo-handling? I am looking forward to listening to Dr Henriette de Nieukirk’s paper at this conference.

8 Taxation

Some countries, including Britain, have introduced tonnage taxes intended to be roughly equivalent to the dues charged by flags of convenience. Other countries are currently considering this and interested parties sometimes plead that they want a “level playing field”. Treasuries often resist this because they fear to establish a precedent.

Most governments, however, try to be fair within their own countries: indeed, that is a definition of good government. Should we have, therefore, a level playing field within a country or between countries? No obvious compromise presents itself.

It is possible, however, to use economic principles, such as the marginal rate of substitution, to consider which is best. It is easy to substitute one ship, or one flag, for another: it takes longer to shift resources from one industry to another. If, therefore, the marginal rate of substitution is higher within shipping than between that and other industries then we have a powerful economic support for the tonnage tax. However, I have yet to see this argument deployed.

Two policy solutions to some present problems

I began this paper by discussing the relative importance, for this and other countries, of consumers’ and producers’ surpluses; and I promised to suggest some policy solutions. All that I have been saying is that conventional ideas, as used elsewhere, may be applied to problems in sea transport. I would agree, however, that there may be problems with some of the interested parties, who may not
understand conventional economic concepts; or, understanding them, prefer to obfuscate by denying such parallels as I have been quoting; or by ignoring them. Nevertheless, though I believe that there is a long way to go, I think that the general standard of discussion of maritime policies has risen immeasurably in the last forty years. IAME, its conferences and its members have played a substantial part in this.

There are three ways to make money in shipping. You may develop or adopt new ideas like the high-speed, twin hulled, ships sometimes known as catamarans. In general you will then specialise on technologically advanced ships, sometimes leading the world. This is difficult because not all new ideas are good. Consider, for example, the LASH ( = Lighter Aboard Ship) and BACAT ( = Barge Aboard Catamaran) designs. (These were once thought to be the answer to problems of ship turnaround, but were found wanting.) Stena Line and the old-established British firm of Everards are amongst those who follow this policy of investing in advanced ship designs.

Secondly, you may decide to operate mature systems like bulk carriers, crude oil carriers or container ships and try to do so better than others. This is also difficult because they are also trying to do better, and some of them are likely to be rather good at it. Moreover, as I have indicated, there is unfair competition from ship operators who cut costs by breaking the rules on safety.

Thirdly you may trade in ships by buying and selling them, hoping to buy at the bottom of the market and to sell at the top, possibly when some international crisis has occurred. It is necessary to get the timing right if only because the alternative may be disaster, especially if your financial gearing is high.

All these, then, are difficult.

My first policy solution, therefore, is simple: if the long-term average return, taking current profits and capital gains into account, is likely to be as low as those in the business generally suggest and if the risks are likely to be high:

then do not do it.

This is sometimes known as the ‘Canadian’ policy, because it seems to have been first formulated there. It means that, except for some special purposes like ice-breaking, you charter ships from
others, usually at advantageous rates and you let them take the high risks and modest profits which history suggests will generally prevail. It is, of course, necessary to appreciate that there may be occasional periods, when a shortage of shipping will lead to high charter rates. (We are having one of these now.) You will then have to grit your teeth and accept losses in the knowledge that the supply of shipping is likely to increase, the shortage to be relieved and your costs fall to a more reasonable level. As I have said, history suggests that this will happen fairly soon. Such a policy is, at least implicitly, followed by Australia, Argentina, Brazil, Canada, Chile, Colombia, France, Italy, Japan, New Zealand, South Africa, the USA and many other countries, demonstrating that it is perfectly possible to be a major operator in world trade whilst having only a modest merchant fleet.

The second policy solution is a little more sophisticated. If, subject to the arguments I have been presenting, free trade and free markets are the best solution and if, yet, these ideas are not practiced for such important economic sectors as manufacturing and agriculture, which thus remain protected, then it is likely that those sectors will absorb more resources. They will become, and remain, larger than they otherwise would have done: and unprotected sectors like shipping will be correspondingly smaller. As long as the protection which leads to such distortions is likely to continue there is, therefore, some case for providing some protection for the shipping industries of such countries.

This will not be the best solution – indeed, it is often called the ‘second-best policy’; but it is likely to lead to a distribution of resources, and a level of economic welfare, which is better than it otherwise would have been; and it is yet another example of how a professional approach may help in considering problems in sea transport. To take a practical example of some recent importance, this idea might have provided further support for changing British shipping from corporation tax to a tonnage tax. It may also provide an objective basis for the rather wistful and subjective expressions of nostalgia which often appear in maritime publications.

That carpenter was right. If you want to saw a straight line properly then you need a pencil line. The same need for a professional approach applies to designing ships, building them, navigating them and to the consideration of economic policies on maritime matters. All that is needed is the conventional, well-established ideas in economics, like those I have just been describing.

Richard Goss
Pershore, UK
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