

Bass Strait Freight Rates - A Decade After the Inter-State Commission Inquiry

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Abstract:

The Inter-State Commission reported on the Tasmanian Freight Equalisation Scheme in 1985. As a result of its report the current arrangements for the scheme were established. A computer system was installed to assist with the management of the scheme. The database built up as part of the computer system provides a rich source of data on Bass Strait freight rates. The paper draws on the database and reports on an analysis of Bass Strait freight rate trends over the last ten years. It discusses the differences in freight rate trends experienced by large and small shippers and provides some interpretation of the sources of the differences. Comparisons of sea freight rates and door-to-door freight rates provide further insights into differences between large and small shippers. The paper also examines the relative assistance levels received by large and small shippers, but the database does not allow any firm conclusion to be drawn on the trends.

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Introduction

The Tasmanian Freight Equalisation Scheme (TFES) was established in 1976. Its objective was to provide assistance to Tasmanian shippers to alleviate the interstate freight cost disadvantage faced by them. Because interstate freight could not move by land transport modes, Tasmanians generally experienced higher interstate freight costs than their mainland counterparts. The scheme at that time was described in the guidelines as 'subsidising transport services by sea between Tasmania and the Mainland in order to make the door-to-door costs of the Tasmanian consignor approximate the door-to-door costs of moving similar goods by road or rail over the same distance on the Mainland' (DOT 1978, p 1).

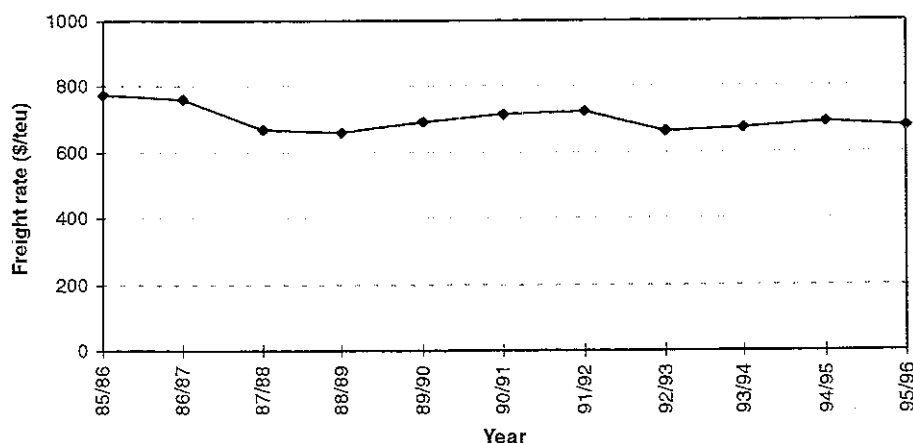
The TFES was next reviewed in 1985 (ISC 1985). The Inter-State Commission (ISC), in reviewing the scheme argued that wharf-to-wharf freight rates for sea transport across Bass Strait should be the basis for compensating Tasmanian shippers for any freight cost disadvantage they suffered. The ISC arrived at this view because any freight cost disadvantage Tasmanian shippers suffered was a consequence of the existence of Bass Strait. The use of shipping services across Bass Strait could not be avoided by using another surface transport mode. Although the Government of the day did not accept all of the reasoning behind the ISC's conclusions it did accept the principle that wharf-to-wharf freight rates from Northern Tasmania to Victoria should form the basis for calculating assistance payments.

The revised scheme came into effect on 1 September 1985. At the same time a computer system was established to assist in the administration of the scheme. Details of each claim are stored in a database. Each claim must include information on the freight rate paid as this is required for calculation of the appropriate rate of assistance. The database therefore provides a valuable resource for the analysis of freight rates since the introduction of the revised TFES scheme. In late 1996 the Bureau of Transport and Communications Economics (BTCE) assisted the TFES Review Authority in its review of the scheme. This paper presents results of the BTCE analysis some of which are also reported in the TFES Review Authority's report of its review of the rates of assistance (TFES Review Authority 1996).

Operation of the Scheme

Assistance levels provided by the scheme are based on wharf-to-wharf freight rates across Bass Strait. The Scheme accommodates those shippers who ship on the basis of door-to-door freight rates by subtracting a specified amount from door-to-door freight rates to adjust them to nominal wharf-to-wharf freight rates used for calculating assistance payments.

The Scheme allows for a reduction in the level of assistance paid if a shipper is successful in negotiating freight rates less than a specified rate defined for each route and type of freight through a system of minimum payments. If the difference between the wharf-to-



Source IFES database

Figure 1 Average wharf-to-wharf freight rates for Bass Strait containers

wharf freight bill and the scheduled rate of assistance (the net freight cost) is less than the minimum payment, the assistance paid is reduced by 50 cents for each dollar the net freight cost falls short of the specified minimum payment. In addition shippers who receive assistance in excess of \$300 000 in a financial year have their assistance payments in excess of \$300 000 reduced by 10 per cent and if the total assistance exceeds \$1 million the reduction increases to 20 per cent for the excess over \$1 million. This reduction is referred to as discounting in the terminology of the Scheme

Although the Scheme is based on Bass Strait freight rates, ie from Northern Tasmania to Victoria, Tasmanian shippers consign freight to many other Australian destinations and also consign freight from Southern Tasmania to mainland destinations. Transport of consignments other than from Northern Tasmania to Victoria involve land transport movements that are not related to any disadvantage caused by Bass Strait. The minimum payment system also takes this factor into account and in effect adjusts the reported freight rate to a nominal Bass Strait wharf-to-wharf freight rate.

The data base for the IFES includes the freight rate actually paid by the claimant. However, the only direct measure of freight rates across Bass Strait is in those claims that report wharf-to-wharf freight rates from Northern Tasmania to Victoria (referred to as the Bass Strait route in this paper). The following analysis is primarily based on wharf-to-wharf records in the data base, with some additional comments based on door-to-door freight rates.

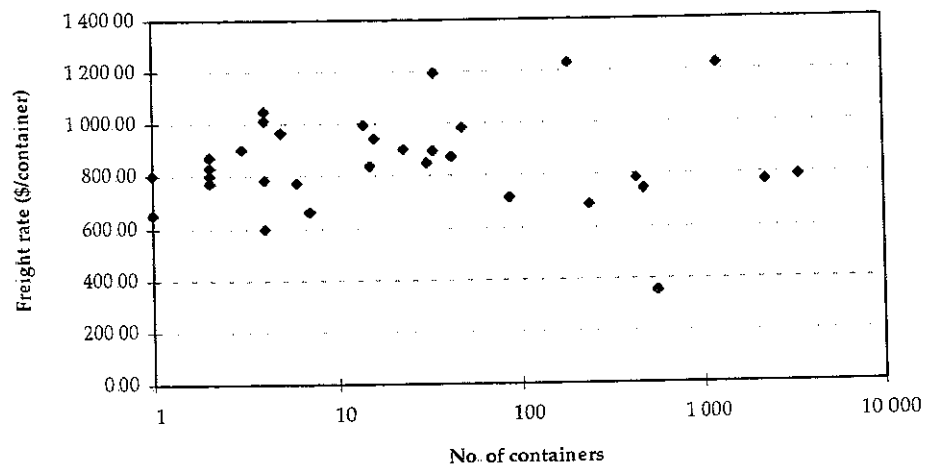
Freight Rate Trends

Figure 1 indicates the trends in average wharf-to-wharf freight rates for 20 foot containers on the Bass Strait route. In the ten years from 1985/86 to 1995/96 average wharf-to-wharf freight rates declined by 12.3 per cent in nominal terms or 53 per cent in real terms when deflated by the cpi

Cargo movements across Bass Strait are dominated by a few large shippers and the average might reflect the freight rates enjoyed by the large shippers. Small shippers may have experienced very different trends. Possible differences in trends were investigated by plotting a scatter diagram of the average wharf-to-wharf freight rates experienced by all shippers in both 1986/87 and 1995/96. 1986/87 was chosen instead of 1985/86 because the data for 1985/86 do not cover the full year.

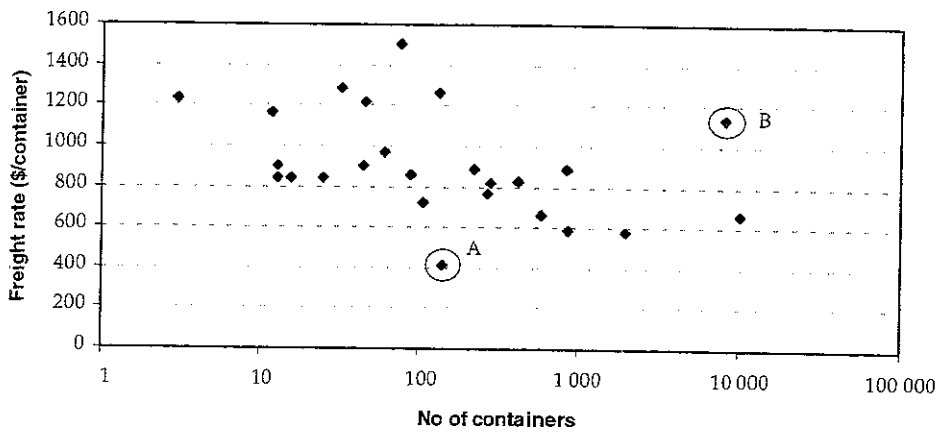
Figure 2 shows the wharf-to-wharf freight rates for all shippers shipping 20 foot containers across Bass Strait in 1986/87. There is no obvious downward trend in the freight rates as shippers increase the number of containers. The maximum freight rates are for refrigerated cargo and the minimum rate is for a cargo that attracts low rates because of its specialised nature.

Figure 3 provides the same information for 1995/96. In 1995/96 there is some evidence that larger shippers were able to negotiate lower freight rates than smaller shippers. Some, but not all, of the higher freight rates in Figure 3 represent freight rates for refrigerated cargo. Point B is for a large shipper of refrigerated cargo and it can be expected that this shipper would pay higher freight rates than other large shippers that consign dry cargo. Point A is the same shipper of specialised cargo as in Figure 2.



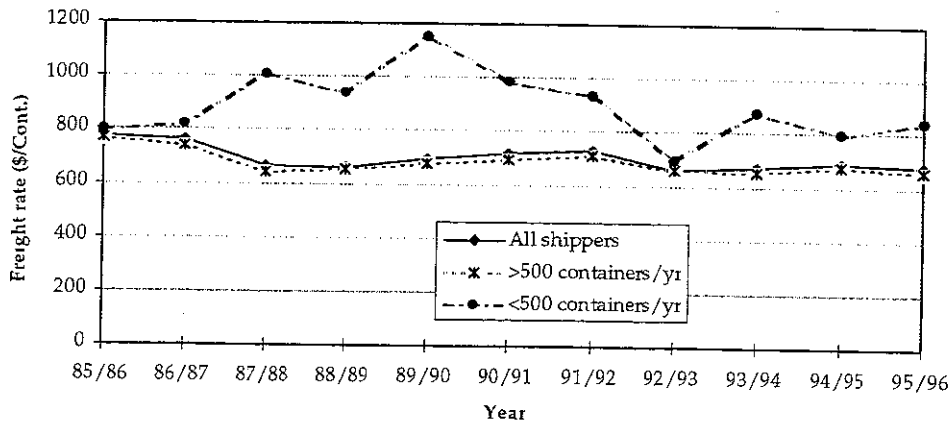
Source IFES database

Figure 2 Wharf-to-wharf freight rates and number of Bass Strait containers, 1986/87



Source TFES database

Figure 3 Wharf-to-wharf freight rates and number of Bass Strait containers, 1995/96



Source TFES database

Figure 4 Average wharf-to-wharf freight rates across Bass Strait, 1985/86 to 1995/96

The average wharf-to-wharf freight rates for large and small shippers are compared in Figure 4, which also shows the wharf-to-wharf average freight rate for all shippers. Large shippers were defined for this purpose as those shipping more than 500 teus per year on the Bass Strait route. The division between large and small is arbitrary, but sensitivity testing suggested that in qualitative terms the choice of the dividing line made little difference to the conclusions that can be drawn. Figure 4 confirms that the average wharf-to-wharf freight rate for all shippers differs little from the rates paid by large shippers. However, the experience of large and small shippers differed markedly.

In 1985/86 and 1986/87 there was little difference between the average freight rates paid by small and large shippers. This is consistent with the data shown in Figure 2 that implied there was little evidence of large shippers paying lower freight rates than smaller shippers in 1986/87. In 1995/96 large shippers on average paid around \$185 per container or 22 per cent less than small shippers. The difference between the freight rates paid by large and small shippers reached a maximum in 1989/90 when large shippers paid \$470 (41 per cent) less than small shippers.

Overall small shippers have experienced much more volatility in their freight rates than large shippers. Although it is not possible to know the full reasons for the trends shown in Figure 4, some conjectures can be made

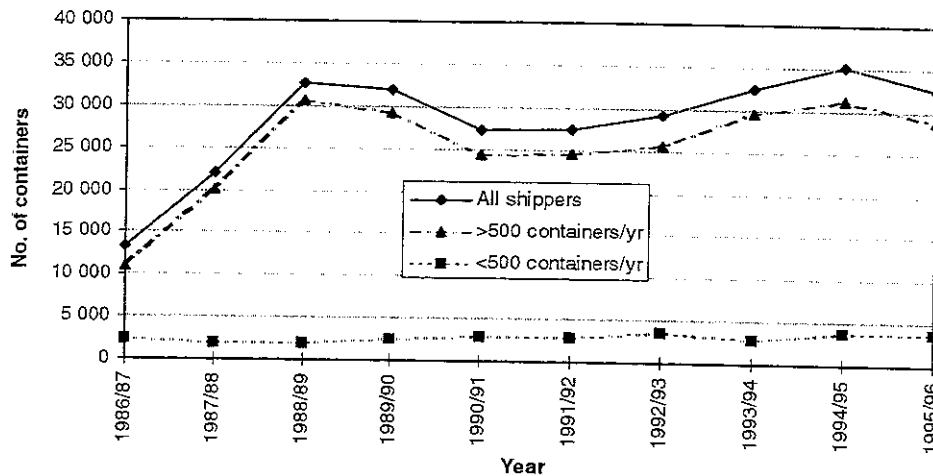
At the time of the ISC report there was little competition on the Bass Strait route and some of the ships were not completely suitable for the trade. ANL was the market leader and Union was the only other operator with a significant share of the trade. Clarke, et al (1984) commented that "so far as we can ascertain USS Co has invariably followed ANL in the announcement and implementation of freight rate increases".

The efficiency of ships trading across Bass Strait was discussed in Transport Tasmania's submission to the ISC inquiry. Transport Tasmania said "the strength of the hull and the configuration of the vehicle deck with its many pillars ... have restricted the flexibility of operation of these ships and led to a tariff structure designed to discourage the use of trailers and 6.1 m ISO containers" (ISC 1985, p 212). At that time the ships operated by ANL were more suited to the use of 5 metre containers.

The evidence suggests that at the time of the ISC 1985 report the focus of the Bass Strait was not on 20 foot containers and that ANL freight rates were the industry standard. Brambles entered the market in June 1985 with a capability to carry 20 foot containers. The capacity at that time for carrying 20 foot containers may have exceeded demand so that the freight rates for small shippers could have been expected to be similar to that for large shippers.

The IFES database contains information that is consistent with this view. In 1985/86 the number of 5 metre containers equalled 48 per cent of the number of 20 foot containers on the Bass Strait route and 26 per cent of the number of 20 foot containers in 1986/87. In later years the number of 5 metre containers was insignificant compared with 20 foot containers. From 1985/86 to 1986/87 the number of 20 foot containers on the Bass Strait route increased by 3.5 times.

New ships entering Australia's coastal trade at that time also had the benefit of reduced crewing following reforms introduced as a result of the Maritime Industry Development Committee (MIDC) and the earlier reforms following the Crawford report. Large shippers were able to take advantage of the new conditions and were successful in obtaining reductions of around \$100 per container in their wharf-to-wharf freight rates. Freight rates for the small shippers in contrast increased by almost \$130 in 1987/88 compared with 1986/87.



Source IFES database

Figure 5 Total number of wharf-to-wharf and door-to-door containers on the Bass Strait route, 1986/87 to 1995/96

The increase in freight rates for small shippers corresponded to an increase in total demand for Bass Strait shipping. However, it is interesting that the increase in demand came almost entirely from large shippers who at the same time negotiated a reduction in freight rates. One possible explanation is that the large shippers provide a base demand for the ship operators and that securing this custom is obviously very important for operators. As can be seen from Figure 5 large shippers provide approximately 90 per cent of total demand for shipping space. It is in the interest of both the large shipper and the ship operator to agree on shipping volumes and freight rates for a reasonable length of time. The small shipper is less able to do this and is more subject to demand and supply conditions.

A simple regression analysis was used to examine the relationship between freight rates and container volumes for large shippers. Freight rates were found to decline with increasing volumes (Equation 1). The equation is a reasonable fit to the data, explaining 64 per cent of the variation. The *t* values (in brackets) indicate that the coefficients are significant.

$$FR = 781 - 0.0036 \times cont \quad R^2 = 0.64 \quad (1)$$

(31.1) (4.01)

Where *FR* = Freight rate (\$ / container)

cont = No. of containers

An attempt to develop a similar equation for small shippers was unsuccessful.

The negative coefficient for large shippers probably reflects the type of contract large shippers have with ship operators. It would not be unusual for a contract to specify that increasing volumes would attract lower unit prices.

Many small shippers would be relatively infrequent users of shipping services. With large shippers providing 90 per cent of the demand and capacity not being able to adjust easily, the marginal cost of carrying cargoes for small shippers would increase as total demand increases, especially if the capacity of the ship operator is close to being fully used.

Figure 4 and Figure 5 support this interpretation. The years of reduced demand made little difference to the freight rate paid by large shippers, but the average freight rate paid by small shippers declined to almost the rate paid by large shippers in 1992/93, when demand was still low, but beginning to increase again. From 1993/94 to 1995/96 freight rates for small shippers increased with increasing demand to be within a range of \$120 to \$220 above the rates paid by large shippers.

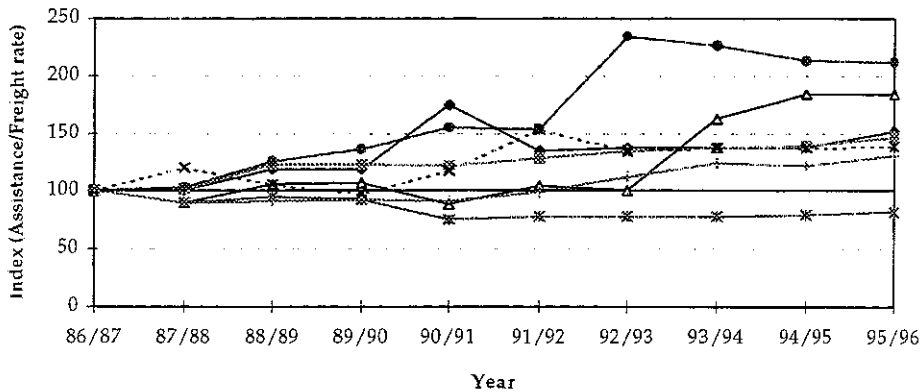
Changes in freight rates paid by small shippers during the early 1990s can be explained by an increase in the supply of shipping services at a time of reduced demand.

ANL brought two new ships, the *Searoad Mersey* and the *Searoad Tamar*, into the Bass Strait trade in 1991. The timing of ANL's move attracted comment in the industry press at the time because of the reduced trade that was evident. For example, Barber (Australian Ships and Ports 1991) commented "Apart from agreements already signed and sealed by various major companies with their preferred clients, no doubt a scramble will continue for the small and often more lucrative client wishing to move cargo over Bass Strait". In February 1991 ANL's Executive General Manager was reported as saying "the gap between supply and demand will widen with the introduction of new tonnage - our growth will be at someone else's expense" (Daily Commercial News 1991).

In April 1992 ANL and Union formed Coastal Express Line (CEL) as a joint venture. Although there were some immediate changes to schedules, there was no significant change to overall capacity. In October 1992 the number of services between Bell Bay and Melbourne were decreased and in March 1993 the services between Hobart and Melbourne were reduced by CEL. That is, it was not until late in 1992/93 that capacity was brought closer into line with demand. Increasing demand since 1992/93 and supply better matching demand has seen freight rates paid by smaller shippers increase.

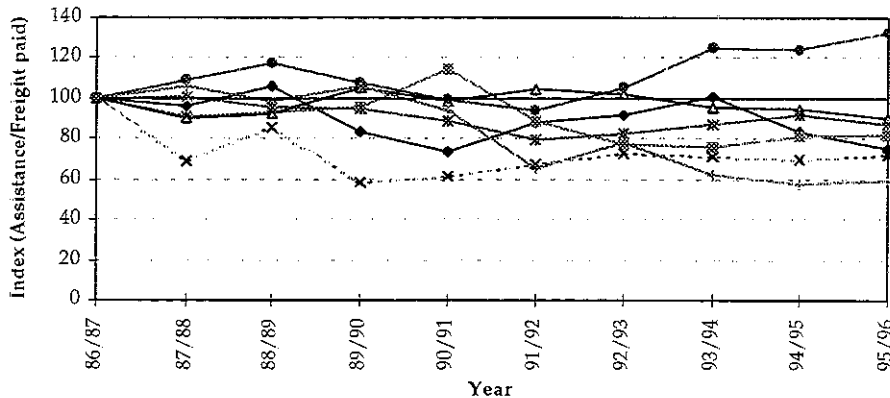
The pattern of freight rates appears to be that the larger shippers have a more stable environment of freight rates than smaller shippers due to their ability to provide substantial freight volume to ship operators and to gain the benefit of long term contracts. The freight rates paid by smaller shippers tend to be more volatile and reflect demand and supply conditions at the time of consigning freight.

Ratio of assistance to freight paid



Source IFES database

Figure 6 Ratio of assistance to freight paid for large shippers, 1986/87 to 1995/96



Source IFES database

Figure 7 Ratio of assistance to freight paid for selected small shippers, 1986/87 to 1995/96

A measure of how well shippers have fared under the IFES is the ratio of assistance received to the total freight paid. The ratio will vary between shippers, routes and cargo type. Shippers consigning freight over routes other than the Bass Strait route will in general have a lower ratio. These other routes are longer and consequently have higher freight rates, but will have the same maximum level of assistance as the Bass Strait route. Because of the higher freight rates, door-to-door shippers will also have lower ratios than wharf-to-wharf shippers and shippers of refrigerated containers will have lower ratios than shippers of non-refrigerated cargo.

Figures 6 and 7 show how the ratio has changed through time for typical large and small shippers respectively. The data are shown in index form for individual companies. The actual ratios in 1995/96 varied from 16 per cent to 66 per cent for shippers subject to discounting and averaged 33 per cent after discounting. The average ratio for shippers not subject to discounting was 29 per cent.

Although there is variation between shippers there is a distinct pattern. Large shippers have tended to increase their ratio of assistance to freight paid. Small shippers have not been so fortunate. Over time the trend has been for them to receive a reducing proportion of their freight bill from the TFES payments.

There are a number of possible explanations for the difference in trends. For large shippers, transport costs represent a large sum of money. It is worth their effort to explore means by which the total net freight bill after TFES payments can be reduced. The most recent example is the change of shipping arrangements for ANM who switched from Hobart to Burnie as the port for shipping their products to the mainland.

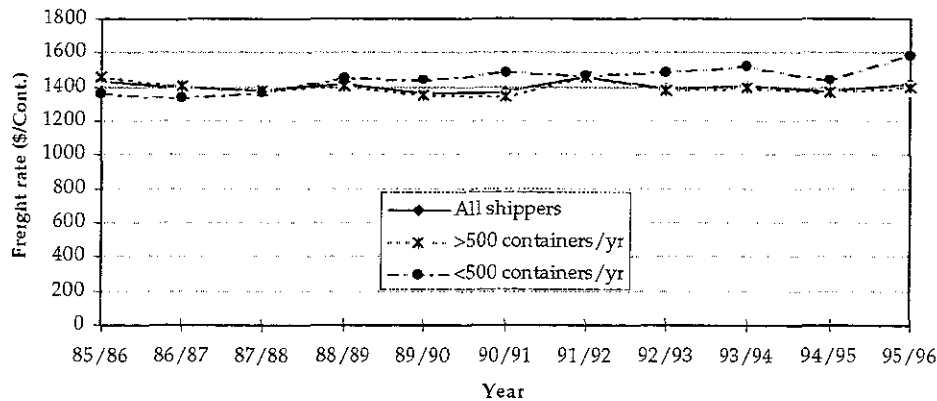
Smaller shippers are a much larger group than the large shippers. The composition of the small shipper group is constantly changing and in the analysis for this paper there were comparatively few small shippers that had consistently shipped during the nine years from 1986/87. It is possible that a larger proportion of small shippers now ship to more distant destinations or ship door-to-door or use refrigerated containers than earlier in the period. Nevertheless the evidence is suggestive, although not conclusive, that large shippers have improved their net freight costs relative to smaller shippers.

Door-to-door freight rates

Average door-to-door freight rates have remained reasonably stable over the ten year period from 1985/86 to 1995/96 (Figure 8). As for wharf-to-wharf freight rates the average rate for large shippers is close to the average for all shippers. For small shippers there has been a consistent upward trend in average door-to-door freight rates.

The difference between door-to-door and wharf-to-wharf freight rates is largely due to the road transport costs necessarily required for door-to-door services. It could be expected that large shippers should be successful in negotiating lower road transport rates than small shippers. As a consequence it would be a reasonable expectation that the difference between the freight rates paid by large and small shippers would be greater for door-to-door than for wharf-to-wharf freight rates. However, the differences have in fact been smaller for eight out of the ten years since 1985/86. One of the major reasons for the relatively higher door-to-door freight rates paid by large shippers is that on the Bass Strait route the large door-to-door shippers are mostly those shipping refrigerated cargoes.

Over the ten year period the average wharf-to-wharf freight rates paid by large shippers (Figure 4) has exhibited a downward trend whereas door-to-door freight rates (Figure 8) have tended to remain constant. It could be concluded that large shippers have faced



Source IFES database

Figure 8 Average door-to-door freight rates across Bass Strait, 1985/86 to 1995/96

increasing road transport costs over this period. The evidence for small shippers is less clear. Wharf-to-wharf freight rates for small shippers has been more volatile than for large shippers over the period, but wharf-to-wharf freight rates have shown a consistent downward trend since 1989/90 compared with an upward trend for door-to-door freight rates. Again it could be concluded that small shippers have also faced increasing road freight rates since 1989/90.

The Bass Strait route is defined for IFES purposes as from Northern Tasmania to Victoria. The distance travelled by door-to-door cargoes on this route can vary considerably from consignment to consignment and door-to-door freight rates could also be expected to vary with the differences in distance travelled. If there has been a consistent trend to longer journeys for door-to-door freight than this could also explain the apparent increase in road freight rates. Also there may have been a change in the commodity mix and greater use of refrigerated cargoes that attract higher door-to-door freight rates. The IFES database did not allow satisfactory resolution of this issue.

Conclusion

The IFES database has provided a valuable source of data for analysis. The analysis has indicated that Bass Strait wharf-to-wharf they have freight rates on average have declined in nominal terms over a ten year period and by a significant amount in real terms. The improvement in freight rates can be attributed to reforms of Australian coastal shipping and increased competition on the Bass Strait route.

Although average freight rates have improved, large shippers have been the main beneficiaries of the improvement. Small shippers pay higher freight rates than large shippers and their freight rates tend to be more volatile. On average small shippers receive proportionately less in assistance from the IFES. The ratio of assistance to

freight paid for small shippers has tended to decline over the ten year period and increase for large shippers. However, the decline in the ratio for small shippers may be due to changes in the commodities shipped and in the destinations to which they ship them.

Although there is some evidence of increasing road transport costs paid by Tasmanian shippers over the ten year period, the evidence in the TFES database is far from conclusive

Acknowledgments

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