

# THE BENEFITS OF MINIBUSES

## *A Comment*

By Peter R. White\*

Professor Walters has an apt choice of title, for his paper (Walters, 1979) considers the benefits of minibuses but omits many of the costs, both social and financial. The following comments, based on evidence collected in Kuala Lumpur in August 1979 (White, 1980), are intended to redress the balance.

The assessment of operators' costs in Appendix I of Walters's paper appears to be based on one shift of staff per eight-hour day; yet all minibuses operate over a day of about 16 hours, and two shifts are thus required. Purchase costs appear to be represented by a sum written off over five years, with interest of 12%, and no residual value or replacement depreciation is shown. In the light of British experience, and that in Kuala Lumpur where the minibuses are used very intensively, about three years would be a reasonable estimate, at any rate for the lightweight Japanese models which comprise more than half the fleet; some of the first to enter service in 1975 have already been withdrawn. The assumption of 33 mpg is a very high estimate of fuel efficiency, especially for the heavier Mercedes minibuses, for which about 20–22 mpg would be a reasonable figure. The estimate of operator costs is thus grossly optimistic, and leads to a considerable overstatement of profits for the revenue shown.

Actual returns on capital are difficult to estimate because of practices such as sub-leasing of licences, etc., but an estimate by Simpson (1979b) suggests an average of 20 to 30% in 1979, *and a similar return* for conventional buses on the same type of high-density routes.

Turning to user benefits, those choosing to use minibuses undoubtedly derive time savings, both in waiting (because of their higher frequency) and in in-vehicle time. A few long-distance passengers also make fare savings where the graduated fare exceeds the flat rate. However, in responding to minibus competition, the existing stage operators have had to cut their frequencies (and, in the case of Sri Jaya, increase size of vehicles) to remain profitable. As Walters rightly assumes, there are no long-term economies of scale by fleet size where operating costs are concerned. However, the lower frequency has led to longer waiting times for the users of conventional services, who still constitute the majority of bus passengers in Kuala Lumpur. A fare increase on conventional services may also be attributed in part to the effects of minibus competition.

Thus both user and operator benefits from minibuses are overstated. Making a more realistic range of assumptions, Simpson (1979a) suggests a range of annual benefit (on equity time values) ranging from +18.1 to -11.0 million dollars. On behavioural time values the range is from +12.6 to -6.1 million dollars. Taking

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the mid-points of these ranges, a net benefit is shown, but very much less than suggested by Walters.

The introduction of minibuses has not caused any marked increase in total capacity (though the average size of new conventional vehicles has risen as a result of the abolition of fuel tax), since conventional operators responded to the competition by cutting back their fleet size from the 715 in 1973 quoted by Walters to 637 at the end of 1978, i.e. by about 80 vehicles. The additional 400 minibuses, each with a seating capacity only about one-third that of the conventional buses displaced, have resulted in only a small net increase in total capacity. Their main effect appears to have been to draw passengers from conventional operators, rather than to increase total volume.

There is certainly little evidence of services having become more attractive to car users, and implementation of the road pricing scheme—for which gantries have been erected—remains uncertain. The irregularity of the minibus operation, extensive carriage of standing passengers (contrary to the original intent) and the habit of turning short of the advertised destination, lead to low confidence in the minibuses (see for example Ahluwalia, 1979).

As Walters indicates, the flat fare on minibuses, set against the graduated fare on conventional buses, results in their attracting trips of above-average length: present breakeven distance is about 6–7 miles. This, together with the concentration of minibuses on trunk routes from the outer catchment zones to the CBD (such as those from Petaling Jaya new town), naturally permits much better utilisation of vehicles. One might draw the same comparison between conventional buses on routes with a high proportion of short-distance passengers and those on limited-stop services with a high proportion of end-to-end traffic (such as London Transport's New Addington–Croydon services). The result is a function of route(s) served, not vehicle size.

Certain advantages enjoyed by the minibuses over conventional vehicles are a result of the specific situation in Kuala Lumpur and not a characteristic of vehicle size. Until late 1979 their routes offered much better penetration of the central business district than those of conventional operators, which were compelled to use bus stations, in one case almost a mile from the CBD. This in turn affected the time savings experienced by minibus users. The situation has now been rectified by a new route pattern for conventional buses offering much better penetration of the central area than before.

The quoted advantages of minibuses in permitting operation by small businesses, offering low costs and more flexible working methods, are a function of the type of firm, not of vehicle size as such, and would apply equally well to conventional buses run by small firms. There is no evidence whatsoever quoted to support the claim on page 330 that "Some part of the minibus operating surplus is probably due to the technology of the smaller bus".

Much of the analysis presented seems to rest on hypothetical demand functions rather than on actual experience in Kuala Lumpur. The separate demand curves for conventional buses and minibuses rest on an essentially arbitrary split by size. One could equally well draw separate curves for each size in a whole range of bus sizes, or by service type, journey type, etc.

The paper ends by asking what would have happened if the existing bus companies had been given authority to run 400 minibuses. One could replace this with two questions of much greater relevance:

- (1) What would happen if the new operators, who were permitted to provide additional capacity only in the form of minibuses (at World Bank suggestion), had been permitted to choose what size of vehicle to purchase to run their services?
- (2) What would happen if price competition were extensively encouraged, so that on trunk routes conventional buses could offer low fares (instead of cross-subsidising other services) and thus compete more directly with minibuses which are at present concentrated largely on those routes?

Only if these conditions applied, and if minibuses were *then* selected in substantial numbers, could one claim a benefit for small vehicles as such.

### *A Rejoinder*

By A. A. Walters\*

Mr. White's first point is that I have seriously underestimated the costs of minibus operations and so I have overestimated the profits and benefits. Perhaps so. I used the calculations of "experts" (and adjusted them for changes in observed operations) and Mr. White (citing for example what he thinks are "reasonable" average lives of three years) prefers the evidence of some other experts "in the light of British experience" (Simpson, 1979b). A plague on all experts! It would be an intolerable bore to go through the synthesised accounts trying to show what is or what is not "reasonable".<sup>1</sup> What one can do, however, is to seek for analogous situations where similar minibus operations are being carried on *under competitive conditions* with virtual free entry (Walters, 1979). Then the fare so charged is an approximation to the marginal and average cost, as revealed by actual market behaviour. It so happens that in the same region Bangkok, a large and highly congested city, during this period had an extensive (illegal but tolerated) minibus service using a wide variety of small vehicles, many similar to those used in Malaysia. The flat rate fare was U.S.\$0.05. This figure for Bangkok compares with my calculated figure for Kuala Lumpur (excluding normal profits) of M\$0.09 or approximately U.S.\$0.042. With normal profits at about 20% of revenues, the match is rather good!<sup>2</sup>

Of course, experts have argued that those minibus operators (in 1975) in Bangkok were not covering their costs, and were therefore incipient bankrupts—a disaster that, after four inflationary years, one was still waiting for in 1979. There are many other examples of similarly low costs of private enterprise minibus operations (e.g., Hong Kong, Istanbul, Buenos Aires), but the data are confounded by various restrictions on

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<sup>1</sup> As B. Amos once said, many cost experts resemble the engineers who proved conclusively that the bumble bee cannot fly. See also Walters (1979).

<sup>2</sup> Additional confirmation is derived from the fact that my estimated figure for the overall rate of profit on minibuses in Kuala Lumpur is roughly the same as that reported for similar vehicles (public light buses) under similar, but not identical, conditions in Hong Kong.

entry (and particular problems of tariffs, etc.), and so one is forced to measure the excess profits due to such restrictions—a task which has no place in this note.

Mr. White's second point is that I have not taken into account the additional waiting time of conventional bus users. As I said in footnote 14, I did, and found it trivial. The loss applies only to *short* distance journeys and then only to those persons who choose to wait for the somewhat cheaper bus rather than get on the intervening minis—so their *revealed* value of time is much lower than the average valuation. Furthermore, the reduction of effective bus frequency is, on Mr. White's figures, less than 11% overall, and probably less on the short-distance services. We also know that many minis split the fare for short-distance trips, so that they are about as cheap as buses; and finally, for those passengers who value time so little, the option of walking up to 2 miles is a very close substitute. I confirm that the disbenefit is indeed trivial.

I am unable to follow Mr. White when he first commends me for assuming that there are no long-term economies of scale, and then says that "a fare increase on (bus) services may also be attributed in part to the effects of minibus competition." Would therefore more competition, say from another thousand minibuses, contribute to yet higher bus fares? Similarly I find it difficult to see why Mr. White naively accepts a newsman's accounts of the "low confidence (presumably by passengers) in the system" of minibuses. If people have such low confidence why are the minis obviously in such avid demand? Is not revealed demand rather better evidence than newspaper chat?

On the other hand, Mr. White is quite right to stress that the benefits are not necessarily a function of the size of vehicle.<sup>3</sup> However, I think that the presumptive evidence that size of vehicle does have *some* effect is quite convincing—in part this is reflected in the extraordinarily large unsatisfied demand for mini-licences while, on the other hand, the conventional bus firms, unconstrained by licences, had actually cut back even before minibuses were licensed. More persuasive, however, is the evidence that in other countries, where there is freedom to choose the size of vehicle (as in Buenos Aires, Tegucigalpa, Bangkok, etc.), the private entrepreneur chooses a small bus. Indeed I cannot find a case of a competitive system with no rigid constraints on entry where entrepreneurs have chosen large buses. This challenge I leave with Mr. White.

#### REFERENCES

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<sup>3</sup> I would argue, though I suspect that he would not entirely agree with me, that it would have been best to let *everyone* choose the size and type of vehicle that best suits him; and, further, let there be open competition on fares also.