

# Changing Pattern of Urban Travel and Implications for Land Use and Transport Strategy

F. V. WEBSTER AND P. H. BLY

The Transport and Road Research Laboratory carried out a study of the changing patterns of urban travel for the European Conference of Ministers of Transport. This study examined the various factors that affect the use of public and private transport in cities and concluded that public transport would ultimately decline even in those countries where its use was currently rising. In contrast the factors that favor car use were likely to continue to do so well into the future. In this paper the implications of those findings and some of the options available to policy makers are examined.

Public transport use has been declining for more than 30 years in the United Kingdom, and current land use trends are making it increasingly difficult to provide adequate public transport services in areas where jobs, homes, and other facilities are becoming more and more dispersed. There is concern for those who do not have access to a private car and who are dependent on public transport. There is also concern in many quarters for the urban areas themselves—the increasing urban sprawl, the spread of congestion in both time and space, and the areas of dereliction that are appearing in some of the inner suburbs. Many planners concerned with these problems view with envious eyes some of the more attractive Continental cities, which have managed to remain reasonably compact and to retain thriving centers bustling with life and activity, and where use of public transport is stable, or even increasing. Even so, some policy makers in these countries are worried by the increasing amounts of subsidy absorbed by public transport and by social and economic changes that may adversely affect urban vitality in the future.

The concern for the way cities are developing and the implications of this for travel led the U.K. Transport and Road Research Laboratory to embark on a study of urban travel in a number of different types of cities under the auspices of the European Conference of Ministers of Transport (ECMT), which greatly facilitated the collection of data from more than 100 cities in 16 countries. The work was carried out by the present authors and M. Dasgupta, R. H. Johnston, and N. J. Paulley. The results of the study were presented to the Council of Ministers in 1984 and the report was published by ECMT in 1985 (1).

In this paper a rather qualitative summary is provided of the main findings of the ECMT study, and on this basis the impli-

cations for future urban policy are set out. The trends in the main factors that affect the use of public and private travel modes are examined, and how these might change in the future is considered. The options open to policy makers are described, and the likely impacts of adopting particular policies are assessed.

## PAST TRENDS

The main trends affecting travel are those that are concerned with the cost of travel (and the ability to afford it), the quality of travel, the benefits of traveling to particular places, and the relative locations of origins and destinations.

### Increasing Affluence

The universal increase in car ownership is a direct result of increasing affluence and there is no sign yet of approaching saturation, even in rich countries like the United States (Figure 1). Having a car available is the biggest single factor affecting use of public transport, and a surprising similarity in the effect of car ownership in different cities and countries was found, as shown in Figure 2. A first car in a household results in a drop in public transport trip making of roughly 40 percent; the addition of a second car removes a further 30 percent of the remaining public transport trips.

Increasing affluence also allows travelers to shift from "cheap" modes, like walking and cycling, to more expensive ones, like car and public transport. Figure 3 shows how car ownership affects trip making by different modes across samples of households surveyed in both Britain and France. The car takes the majority of trips in car-owning households and is likely to be preferred for almost all journeys for which it is both suitable and available, but more affluence will nevertheless generate some extra travel in the form of new trips or extensions to existing ones. Figure 3 shows that car ownership reduces both walking and public transport use overall, but, nevertheless, increasing affluence may encourage some transfer of trips from walking to public transport. This will tend to occur when access times are low (more people will "hop on a bus") and when there is some benefit from taking a longer bus trip to a more distant destination instead of a short walk to a local destination. Journeys by cycle or moped are similar in length to bus journeys so that increasing affluence may well encourage some transfer, though, as Figure 3 shows, trip rates

U.K. Transport and Road Research Laboratory, Department of Transport, Old Wokingham Road, Crowthorne, Berkshire RG11 6AU, England.

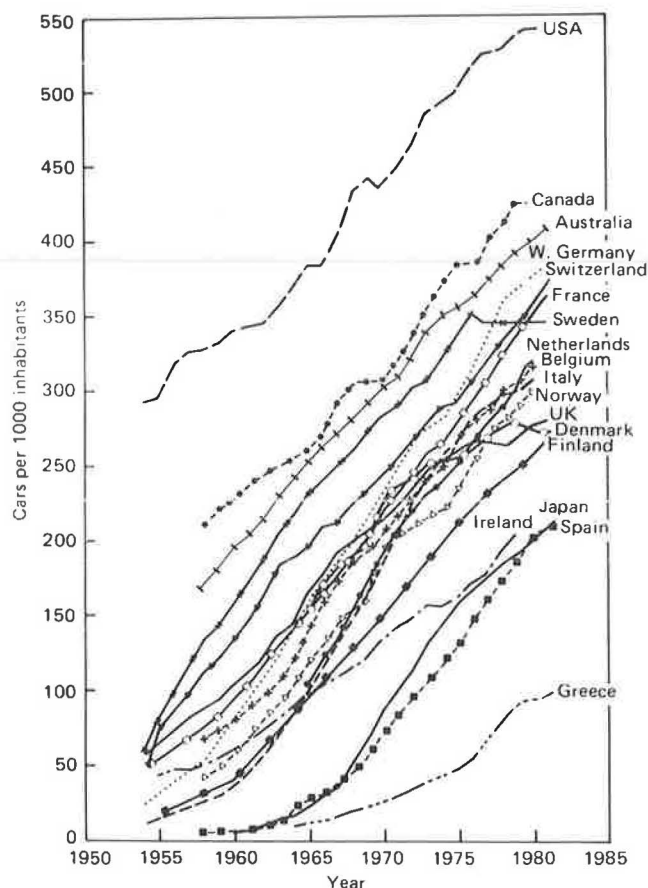


FIGURE 1 Growth in car ownership in a number of countries (2).

by these modes in most British cities are fairly low. In many Continental countries, however, the scope for transfer is greater, though diminishing. The study showed that transfer from two-wheeled trips to public transport has been an important factor in a number of French cities (3).

### Price and Quality

Car running costs have remained fairly steady in most countries

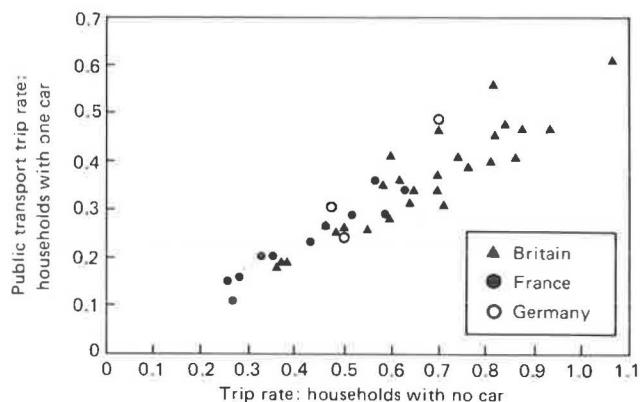


FIGURE 2 Comparison of trip rates for bus and tram of households with and without cars in a sample of British, French, and German cities.

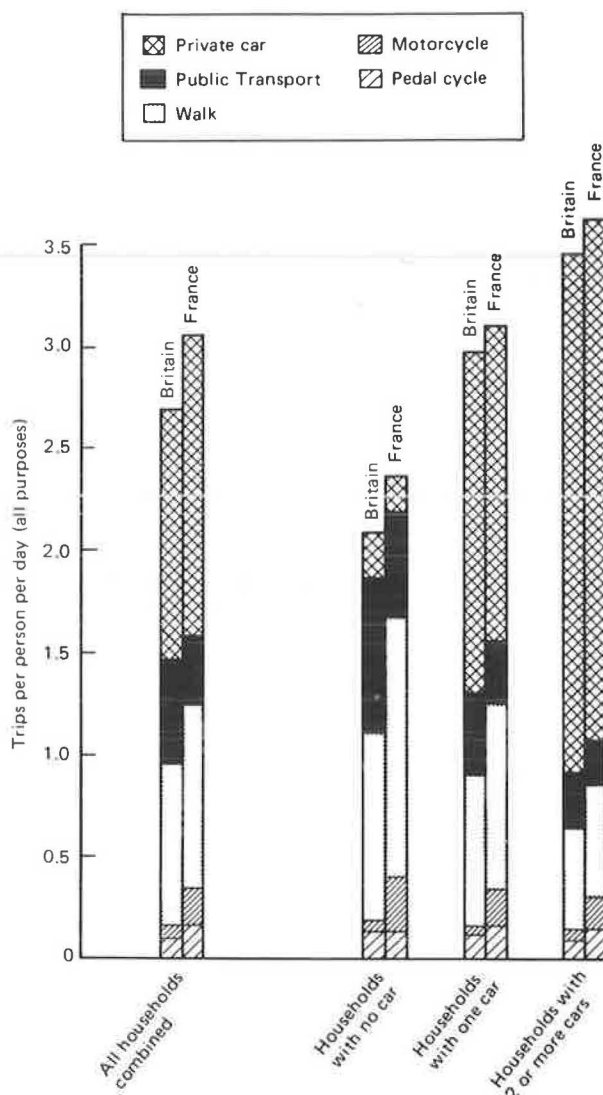


FIGURE 3 Daily trip rates in a sample of major towns in Britain and France for different levels of car ownership.

for many years despite two oil crises in the 1970s. In contrast, almost everywhere despite a general improvement in productivity, but subsidies have cushioned these rises so that in some countries, particularly in Continental Europe, fares have actually fallen. In the United Kingdom, increases in subsidy have not been sufficient to offset rises in costs and the effects of reduced patronage, so fares have risen consistently over the years relative to other prices, causing appreciable reductions in public transport use.

Road network speeds have been relatively constant over the years, though in the larger cities there has been some peak spreading. However, because more and more journeys are made in the outer areas of cities as both population and employment disperse, travel by car is generally becoming faster. In-vehicle speeds of bus travel are probably increasing for the same reason, but total journey speeds (including walking and waiting) are falling in many cities because of the longer access

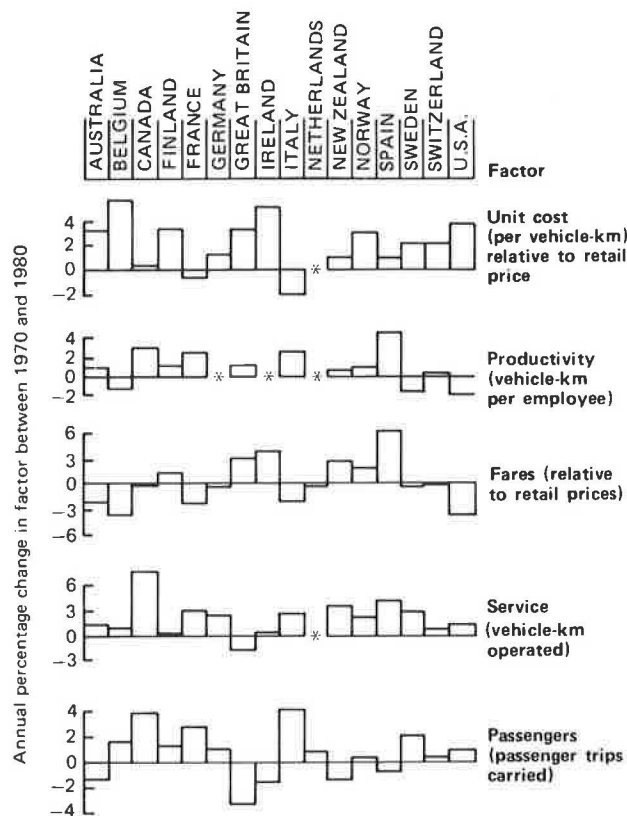


FIGURE 4 Mean annual trends in public transport costs, productivity, fares, service, and ridership between 1970 and 1980.

times that result from the lower service levels and sparser route networks in outer areas. In addition to this effect, waiting times on all routes (central and outer) in British cities are tending to lengthen as services are reduced in response to falling patronage—a trend that is not relevant to Continental cities where patronage is buoyant (Figure 4).

### Movement of Population

In almost all developed countries there has been a drift of population from large cities to small towns over many years. Superimposed on this is the migration from rural areas to urban areas that is still continuing in some countries, particularly in southern Europe (urbanization ceased about 30 years ago in Britain). The net result of these changes is that many large Continental cities are still growing while the larger British cities and some of those in northeastern Europe are declining. Figure 5 shows how London peaked in the early 1950s and the main conurbations in the 1960s; medium-sized cities are approaching their peak at the present time, and smaller towns are still growing strongly. Public transport in many of the larger Continental cities is gaining patronage from the extra population, but in the United Kingdom the declining population of the larger cities is responsible for some loss of patronage. These losses are not canceled out by corresponding increases in patronage in the expanding smaller towns because people in smaller towns have less need for public transport.

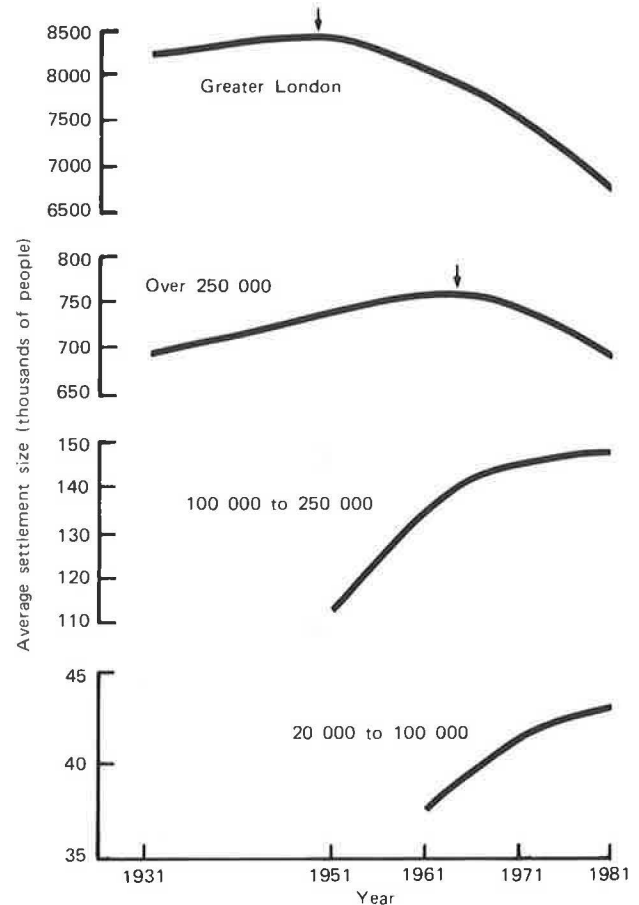


FIGURE 5 Changes in population of towns of different sizes in England and Wales, 1931 to 1981.

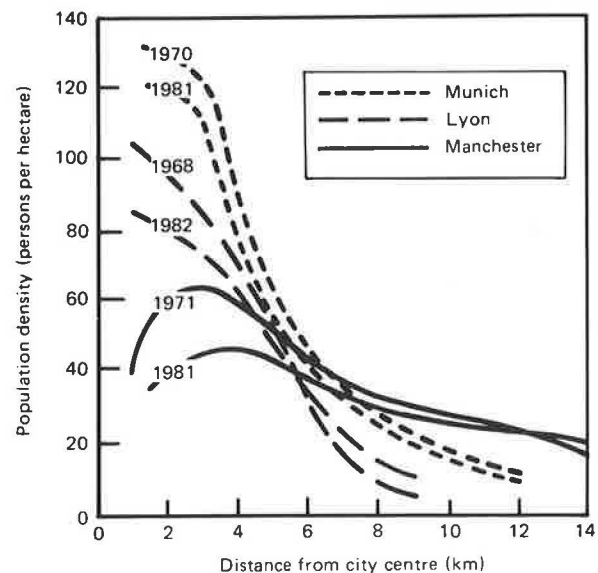


FIGURE 6 Changes in population density with distance from city center.

In addition to these trends there is also a movement of population from inner to outer areas of practically all major cities; this is causing a general decline in built densities, especially in the inner areas, as shown in Figure 6. Because of

the compactness of many Continental cities, a relatively high proportion of the inhabitants live close enough to workplaces, shops, and other facilities to walk or cycle to them. Population dispersion leads to a greater need for mechanized journeys, and although this encourages car use, public transport also gains, particularly if activities remain in the city center. Suburbanization in the United Kingdom in the first half of the century led to trip rates by public transport that were among the highest recorded anywhere in the world (they are still high despite many years of decline), but car ownership levels were low at that time. Any encouragement that suburbanization might give to public transport in the expanding cities of Europe will now be much smaller than it was in the United Kingdom because car ownership levels are high. Even though initial spreading can bolster public transport use, further dispersion will eventually result in suburban development that is more difficult to serve by public transport and more convenient for the private car, unless development takes the form of "beads on a string" (i.e., high-density settlements surrounded by "green" areas and connected by fast, frequent public transport systems, usually rail; Stockholm and Paris offer good examples of these systems). Thus in some cities the dominant forms of suburbanization are producing a clustered type of settlement pattern that might actually increase public transport use in spite of the dispersion of population and declining overall densities. In others, densities have fallen more uniformly and to relatively low levels, producing the amorphous suburbanization that greatly weakens public transport.

### Changes in Employment

Many of the traditional manufacturing industries of the older cities are dying, leaving the inner city areas surrounding the central business districts (CBDs) of such towns with a diminishing number of employment opportunities. New industries, particularly service industries and high-technology manufacturing, are increasingly likely to locate in smaller towns, as the data in Table 1 indicate, or in the outer areas of larger towns where land is cheap and access to the national road network is good. When both the origin and the destination of trips are in the outer areas, the provision of an adequate public transport service becomes even more difficult and expensive than when only the population is dispersed, and the use of the car is made easier.

Service and retail employment is still largely centrally based and growing, but growth in the outer areas is proportionately greater than in the center, albeit from a smaller base. Although public transport stands to gain from this growth in the city center, it is generally not sufficient to counter the loss of trips caused by the reductions in the manufacturing industry in the area surrounding the CBD. On the whole, therefore, changes in employment location are tending to work against the use of public transport and in favor of the car, though the growth in service employment in some towns (e.g., Toronto) is so great that public transport use is still on the increase.

### Modeling the Changes

In the ECMT study (1) a mathematical model was used to predict the changes in patronage that could be expected to result from the observed changes from one year to the next in real fares ( $F$ ), vehicle-kilometers operated ( $K$ ), number of cars registered nationally ( $C$ ), national population ( $N$ ), level of urbanization ( $U$ ), and number of unemployed workers as a proportion of the population ( $J$ ). The model form was

$$P = P_o F^{e_f} K^{e_k} N(N - \beta C) U^f J^h$$

where  $P_o$ ,  $\beta$ ,  $f$ , and  $h$  are constants and  $e_f$  and  $e_k$  are the elasticities of demand with respect to fares and vehicle-kilometers. The values of these constants were based on the results of statistical regression analysis of the data collected, but in some cases the values obtained from regression were modified in the light of other available information. Because no systematic pattern could be discerned in the statistical relationships estimated for each individual country (and, of course, some were not statistically significantly different from zero), the same values of the coefficients were used for all countries, except that  $\beta$  was varied with the level of car ownership (1, Appendix). Moreover, the fare and service elasticities ( $e_f$  and  $e_k$ ) were given rather larger values than the short-term estimates to represent the longer-term impacts of changing fares and service; this was in line with other TRRL work on predicting the use of public transport (5). The effect of urbanization, in particular, could be handled only in a quite crude way because of the lack of suitable data.

The difference between the estimated change and the actual change, averaged over the period 1970 to 1980, is the

TABLE 1 CHANGES IN TYPE OF EMPLOYMENT IN GREAT BRITAIN BETWEEN 1959 AND 1975 (4)

	Change as Percentage of Total Employment in Each Area in 1959				
	Agriculture	Mining	Manufacturing	Services	Total
London	-0.3	0	-13.0	+1.9	-11.4
Conurbations	-0.3	-2.4	-7.9	+5.9	-4.7
Free-standing cities	-1.0	-3.6	+1.1	+16.0	+12.5
Industrial towns	-1.4	-4.6	+6.9	+21.1	+22.0
County towns	-4.6	-0.1	+7.5	+15.2	+18.0
Rural areas	-6.5	-1.7	+11.1	+11.4	+14.3
Whole of Great Britain	-1.3	-2.2	-2.2	+10.8	+5.1

NOTE: In this table the change in each sector is expressed as a percentage of total employment in each area in 1959. For instance, in London the fall in manufacturing employment between 1959 and 1975 was 13 percent of all employment in London in 1959, but as a proportion of all manufacturing employment in London it was 38 percent.

"residual" trend: this is the unexplained part of the trend, representing the combined effect of factors that have not been considered in the calculations or the treatment of which is otherwise inadequate. The degree of explanation achieved is measured by the extent to which the residual trend has a smaller spread of values across the various countries than had the observed trend. There is, of course, considerable uncertainty in trying to account for the observed trends in this way, but the model was subjected to a range of sensitivity tests, and in general the relative residual trends for the different countries, and the width of their spread, were fairly stable to changes in the assumptions (1, Appendix).

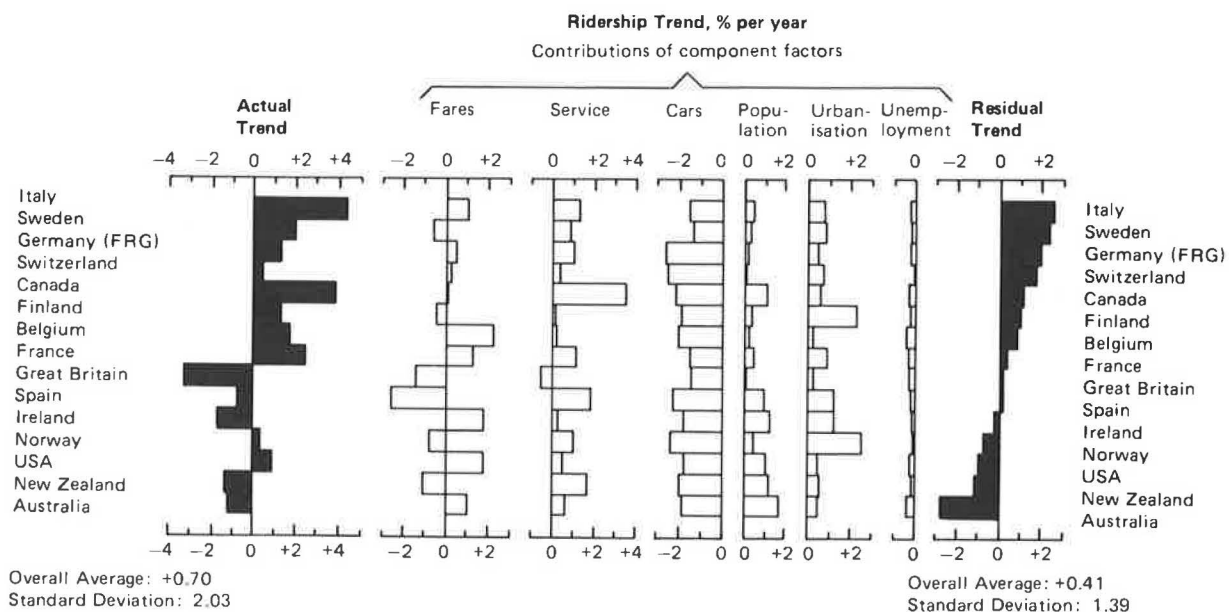
Figure 7 shows the countries ranked according to the magnitude of the residual trends and the contribution of the individual factors to the explanation of the trends between 1970 and 1980. The standard deviation of the residual trends is 1.39 and that for the actual trends is 2.03. Thus it appears that the model is able to explain about one-third of the variation. In addition to these factors, however, those countries with a high absolute level of use show a more positive trend over time, other things being equal, than those countries with low use. When this aspect of the explanation is taken into account, it appears that more than one-half of the variation in patronage can be accounted for and perhaps three-quarters of that part of the variation that is likely to be explicable (bearing in mind the inherent variability of the data).

The ranking of the countries according to their residual trends appears tolerably plausible: for example, in Italy, Sweden, Germany, and Switzerland the actual trends are appreciably more positive than the assumed model would suggest, possibly because of heavier than normal use of rail, which may be more effective than bus services in retaining patronage in the face of competition from the car. In Italy the relatively fast growth of the larger cities, which was not adequately reflected in the overall measure of urbanization, has probably been partly responsible for the positive trend. At the other end of the

spectrum are Australia, New Zealand, and the United States, which have favored an especially low-density form of suburbanization, which is particularly unsuited to the use of public transport. Thus the actual trend in these countries is lower than the model would suggest. Nevertheless, it is reassuring that so much of the variation in patronage trends can be explained by a model that assumes that various factors work at the same strength in each of the different types of countries included. It was also of interest that the residual trends for France, Britain, Spain, and Ireland were close to zero: in other words the patronage trend was almost completely explained by the mechanisms included and at the strengths assumed. Thus, compared with other countries, there are no special reasons that make provision of public transport in these countries either especially difficult or specially easy—changes in use are due to factors that appear to be working in all of the countries at much the same strength.

### IMPLICATIONS FOR THE FUTURE

Table 2 gives a summary of the various factors that influence use of public transport or car, and it contrasts the situation in the United Kingdom, with its declining public transport trend, with that in many of the countries in Continental Europe. In the United Kingdom, all of the factors tend to work against public transport and in favor of increasing car use, whereas in many Continental European countries some of the factors still favor public transport. However, they will not continue to do so indefinitely. Urbanization is close to saturation, further reductions in density are likely to create the sort of dispersed suburbanization that encourages car use instead of public transport, and even the creation of high-density satellite settlements will not continue to bolster commuter rail if central-area employment declines or if people elect to live or work in a more



**FIGURE 7** Estimated residual trends for national data (assuming fare elasticity of  $-0.45$  and vehicle-kilometer elasticity of  $0.45$ ).



TABLE 2 EFFECT OF FACTORS THAT AFFECT TRAVEL

Factor	U.K.	Typical Continental Countries	
		Short Term	Long Term
Urbanization	—	y	—
Population dispersion	x	y(?)	x
High-density settlements	—	y	x(?)
Employment decentralization	x	x	x
Travel speed	x	x	x
Car ownership	x	x	x
Travel costs	x(?)	y(?)	x(?)
Transfer from two-wheeled to public transport	—	y	—

NOTE: y = favors public transport, x = favors car, — = no effect or N/A, and (?) = but could go the other way.

dispersed pattern. Transfer from two-wheelers is an important source of public transport patronage in some countries, but this reservoir too must eventually dry up.

Thus in the longer term, public transport use appears to be set to decline even in those countries where it is presently growing and where public transport policies might appear markedly successful. Adoption of the same policies in the United Kingdom would not produce the same level of growth because the favorable factors do not exist in the United Kingdom. Estimates have been made of the likely effects of reducing or withdrawing subsidy in the various countries, using the same assumptions about the elasticity of demand as were used in the trend analysis. Rising subsidies may have reversed a declining public transport trend in almost one-half of the 16 countries in the ECMT study. Only a quarter of these countries would have retained an upward trend in the absence of subsidy and there would have been passenger loss if subsidy had not been allowed to grow. If sufficient funds were available, reversal of the trend could be achieved in the United Kingdom too, but this cannot be a permanent solution: subsidies would have to be increased indefinitely to maintain growth, and the underlying decline would reassert itself as soon as no further increases were forthcoming. A similar boost to public transport use will be achieved if "deregulation" of bus services (under the 1985 Transport Act there are no restrictions, other than safety requirements, on setting up new bus services in the United Kingdom) is successful in reducing costs and making services more responsive to demand: while such improvements continue they will increase patronage relative to the underlying trend, but the fundamental changes in travel patterns described earlier will inevitably continue to reduce the total market in which public transport has to operate.

It therefore appears that long-term decline in public transport use has to be accepted in the United Kingdom and will probably have to be faced eventually even in countries where the prospects for public transport are currently much brighter, but this is not to suggest that public transport will disappear from the urban scene. The present rate of decline in the United Kingdom will slacken in the future as more newly acquired cars are second or third cars in the household. Forecasts using TRRL's bus prediction model (5), shown in Figure 8, suggest that the total of stage bus journeys is likely to decline by perhaps one-quarter during the next 15 years, if the economy grows at 1.5 percent per annum, assuming present levels of

subsidy and fuel prices rising 3 percent per annum over the longer term. On the other hand, if the economy grows at 2.5 percent per annum, encouraging higher car ownership and higher wages in industry, the decline could be as much as 40 percent. If deregulation could achieve an overall reduction of 20 percent in unit costs, the decline would be held to between 10 and 20 percent, depending on economic growth. Whatever the level of decline, services feeding city centers are likely to remain relatively strong, but people without a private car will find it increasingly difficult to get to noncentral destinations as peripheral services become more thinly spread. For people living in the outer suburbs (not all of whom by any means will have a car available) access to the center may be more difficult than it is today because of longer access distances and less frequent services on the outer parts of the public transport network.

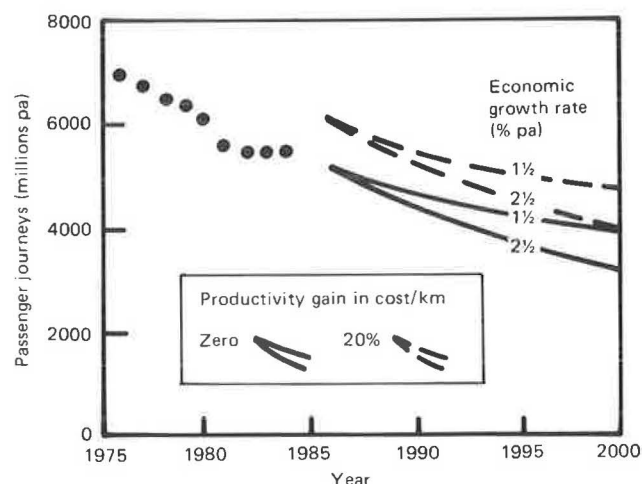


FIGURE 8 Future patronage levels on bus stage services in Great Britain under different assumptions of economic growth.

With increasing office automation, the number of jobs in the city center is likely to decline ultimately even if the total amount of business activity increases. With more floorspace per employed person, the central business district may look much the same as it does today, but the density of jobs will be less. The continuing decline of inner-area manufacturing industry in older cities will tend to increase the proportion of the unemployed, the old, and the disadvantaged in these areas as the young and more highly qualified members of society move out to take up the new, more highly skilled jobs that become available in outer areas and in smaller towns. This will weaken the already fragile financial base of some of these cities.

In contrast, cities with a broader economic base, particularly one that includes major financial institutions or new high-technology industry, will attract a disproportionate share of new jobs and young, economically active residents. Their centers are likely to thrive, but their very affluence will encourage expansion at lower residential densities, and their ability to sustain high-capacity public transport services is bound to diminish. If service-sector employment continues to grow faster in the outer areas than in the center, its distribution may ultimately follow the trend in manufacturing, so that the centers

cease to grow and may eventually decline in service activities. The strength of public transport depends substantially on the continuing existence of a concentration of jobs and activities in city centers; if the centers decline, the implications for public transport, and for the structure of the city itself, could be serious.

## POSSIBLE FUTURE URBAN STRATEGIES

The foregoing analysis suggests that there are strong underlying social, economic, and demographic trends that are causing changes in the quality of urban life and in the mobility of the different sections of the community and that it would be difficult, if not impossible, to preserve the status quo. Even if this could be done, the majority of the people would probably not be pleased with such a solution because the changes that are taking place are the direct result of these people's taking full advantage of their increased affluence to widen their opportunities and improve their living standards. The argument that rising car ownership is due to a way of life that compels people to own cars, and that if things were organized differently cars would be both unnecessary and undesired, is not convincing, given the similarity of the link between affluence and car ownership in all countries and environments. It appears that whatever problems mass car ownership may bring, they will have to be coped with.

Nevertheless, even the affluent section of the community will lose something as a result of the changes that are taking place: many people will miss the sort of urban social life that is only possible in thriving cities with strong centers that contain a large residential population. Those who always have a car available are not immune to the inconvenient aspects of a car-based life-style; some of them will be in households where for reasons of age or infirmity not all members can drive and they may find themselves acting as chauffeur to an undesirable extent. But it is the 30 percent or so of the population without access to a car who will suffer most from the effects of mass car ownership and urban decentralization, and it appears that the bulk of the effort in the future should be directed toward ensuring that the needs of this sizable minority are adequately met. There is also the danger that rapid change might bring about a waste of resources; buildings and infrastructure with years of remaining useful life might become obsolete. What can be done?

Unless serious thought is given to these issues and appropriate strategies developed in good time (many schemes have long lead times), it is likely that any measures will constitute little more than a rearguard action, with most of the trends continuing in much the same way as at present but with a few palliatives to ease the burden on those who are most adversely affected by the changes. There are alternative strategies, however, that are more appropriate to the changing situation:

1. Strategies that provide, either through redevelopment or with new construction, homes that are less dependent on the private car for access to jobs and everyday facilities and
2. Strategies that slow the rate of change of urban decentralization through positive incentives so that existing resources are used more effectively and there is more time for adaptation by both people and firms.

The first of these strategies can be achieved either with public-sector housing developments or through planning controls that affect private developments. It may take a variety of forms: one is to have areas of mixed development where residents can walk or cycle to workplaces, shops, or other facilities; another is to have compact areas of housing with good transport links to equally compact areas of workplaces, shops, and the like. Even where housing densities are not particularly high, appropriate planning can greatly increase the accessibility of the occupants to public transport services, as is the case in Runcorn (6). If the areas are planned with concentrations of homes and facilities at sufficient densities to generate a high level of demand for public transport, services could be self-supporting (if need be), even though subsidy might be applied for social reasons. Residents may therefore feel secure in the knowledge that the continuation of their transport links does not depend on the willingness of the local authority to subsidize services or on the goodwill of those voluntary organizations that are being used increasingly to operate community bus services to meet the needs of people in low-density areas. Land use allocation and transport provision must be planned together from the outset for this strategy to work.

The second strategy involves ways of slowing down existing land use trends, particularly those that affect the strength of the town center because without strong centers it is difficult for good public transport services to exist. Attempts to slow these trends using highly restrictive measures (e.g., land use controls that severely constrict the developer's choice, or punitive taxation and pricing measures that affect the location or transport decisions of people and firms) may well be counterproductive in the long term as people and firms exert their right to locate where they wish to be and to travel to destinations of their choice. If one town does not provide the required choice it is likely that another one will.

Prohibitive controls are likely to be successful only if the alternatives they are supposed to encourage (whether these are development forced into alternative locations by planning restrictions or travel forced onto alternative modes by pricing restraints) are sufficiently attractive for people to use them not merely in the short term but also in the years ahead. Some "negative" or prohibitive controls, however, are bound to be necessary if a free-for-all situation is to be avoided, but where possible it is better to employ positive incentives, relying on the "carrot" rather than the "stick."

Making the town, and particularly the town center, more attractive will encourage existing firms to stay (and possibly to expand) and will attract potential developers. It is likely that measures that are successful in retaining employment will also be successful in retaining people, especially the young and more economically active. The process is self-reinforcing: successful towns tend to attract more people and businesses and achieve greater growth, and declining towns increasingly lose their attraction as people and businesses depart. There is also a negative feedback element, however; the more successful a town center is the more likely it is to have congestion, parking difficulties, higher rents, and so forth, which, if left unchecked, will eventually slow down the town's growth. This may not be viewed as necessarily undesirable in those cases in which there are advantages to channeling further growth into other towns.

In most cases, however, these problems will be tackled using the usual remedies of new road construction, provision of extra parking spaces, and improvements in public transport (new metro systems, provision of bus lanes, better services, etc.).

The optimum balance between improvements in public transport and improvements in the road network depends on the extent to which people with a car available are likely to forgo the use of the car and use public transport instead to gain access to town-center activities. This in turn depends on both the attractiveness of town-center destinations and the quality of public transport. High quality in just one of these aspects is generally not sufficient to entice drivers from their cars; both are normally necessary. Thus, in towns that are declining, provision of costly new transport infrastructure may fail to attract new users in sufficient numbers and the investment may only serve to accelerate the decline if it places additional financial burdens on an authority that is already in financial difficulty. In these towns, however, lower congestion, easier parking facilities, and lower rents can be used as bait to attract new development, provided redevelopment can be done on such a scale that it is not devalued by any remaining dereliction. Sensitive redevelopment, which accepts the desire for lower densities and use of the car where this is appropriate and makes the best use of any natural features, such as rivers, canals, hills, open spaces, and buildings of architectural or historical merit, has been markedly successful in many cases. Such improvements are unlikely to reverse the outward movement of people and jobs but may at least slow down the exodus to manageable proportions while creating a much more pleasant environment for those who remain.

Redevelopment on the scale suggested here requires a combination of comprehensive planning, involvement of the private sector, and channeling of market forces because urban economics tend to be governed by the large scale of private rather than public investment. Such redevelopment requires that inner-city land not be overpriced because of historic "book values" (otherwise private developers will be frightened off) and that developable land be put together in sufficiently large parcels, despite the institutional problems, for the plans to be carried through at a reasonable pace. If attempts at redevelopment are too long delayed, the exodus of people and jobs will make renewal even more problematic, especially because it is the more active and affluent members of the community who are also the more mobile.

## CONCLUSION

Urban travel patterns are changing, and factors that encourage the use of the private car are likely to remain important into the foreseeable future, with an increasing share of travel taking place in noncentral areas and in smaller towns. Conversely, those factors that presently favor public transport use in some countries are likely to diminish in the longer term so that there, as in the United Kingdom, public transport use appears to be about to decline.

Increasing subsidies can combat this trend but only at an ever-increasing cost, and the decline would reappear as soon as subsidy stopped increasing (reductions in operating cost would also boost public transport use but would only raise the level from which the decline occurs). The mechanisms underlying the decline are connected with changing patterns of land use and urban development, and these are so fundamentally tied to increasing affluence and car ownership, and to industrial reorganization, that it is neither feasible nor desirable to reverse them. It is more realistic to acknowledge that the size, function, and structure of cities are bound to change and to accept the dispersion of people and jobs away from large towns as an opportunity to redevelop the inner areas in a way that is compatible with people's requirements for more space and more mobility. Integration of the planning of land development and transport facilities can improve the mobility of people who do not have access to a private car, and, if necessary, financial support can be channeled into those areas where it is most needed, either to support extra transport services or to catalyze redevelopment more suited to the new conditions.

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