

# **With the Advantage of Hindsight....**

## **Chapter 1: Time series information and pivotal events**

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## Abstract

This chapter outlines changes and developments in transport and travel in Great Britain that have taken place in the last 50 years. It provides a context for the other chapters of this conference which explore specific subjects in detail. The approach taken in the chapter is to provide a resource of facts and figures which are presented with a structure and commentary in order to offer some coherence and connectivity. The chapter has eight sections, relating to modes of transport and overarching themes. Running through the whole chapter is the unifying issue of the changing role and impact of the private car. The chapter illustrates the ways in which widespread adoption of the private car has had a major influence on the way in which the Britain has developed since 1955, but that increasing recognition of adverse impacts associated with the car and new opportunities for mobility and access led to a turning point being reached in the mid 1990s. Efforts are now being made on a broad front to develop the transport system in a way that promotes more balanced mobility across different modes and there is evidence that personal car travel has stabilised and use of other modes is increasing. Changes to the British economy and the society and lifestyles of its inhabitants took place relatively rapidly in response to the motor car. It remains to be seen how quickly and fully the public are prepared to alter their lifestyles to adjust to a more mixed use of travel modes.

A look-up table of events between 1955 and 2008 is presented first before the main sections of the chapter:

1. Expansion of the road network
2. The changing motor car market
3. The fall and rise of rail
4. Struggle of the bus to remain competitive
5. Time to take a stroll?
6. Environmental consciousness
7. Lifestyles
8. International contrasts and possible turning point

The chapter draws from an extensive set of data and literature resources. It has been attempted to obtain data going back to 1955, where possible, in order to contrast the situation today to fifty years ago. However, only in rare cases has data this far back been available. For example, two key data resources are the National Travel Survey (NTS), for which the first data was collected in 1965/66 (and then 1972/73), and Transport Statistics Great Britain (TSGB), for which the first publication in that form relates to 1964-74. Compounding this problem is the fact that definitions of data and methods of measurement have often changed, further reducing the period for which trend data can be presented. Some international comparisons are made in order to contribute to understanding of the UK situation, but it has not been possible for this to be pursued in depth. Data has generally been available for Great Britain (GB) with the chapter excluding consideration of Northern Ireland where developments over the last fifty years have been somewhat different to those in GB.

## Key Point Summary

### **Lessons from the past and what we can learn from them**

- the concept of roads free at the point of use was adopted early on and ruled out the possibility of road pricing during the period of major motorway development.
- a public backlash against urban motorways from the early 1970s meant that these were little developed, but high capacity public transport was rarely developed as an alternative leading to little choice for many people but to drive in congested urban road networks.
- there have been frequent roads policy rethinks since the early 1970s which has led to stop-start development of the national motorway and trunk road network.
- the link between income growth and road traffic growth is evident over the last fifty years, although the relationship is weaker now than previously. It is also apparent that traffic growth has responded to motorway expansion and to fuel prices.
- road congestion has proved difficult to define and even more difficult to control. Congestion appears to be partly self-limiting but also amenable to reduction if pricing restraints are applied.
- motorway development has contributed to the deconcentration of population and economic

activities which has applied further pressure on road networks. Current policy to focus development within existing settlements (or self-contained new settlements) will require coordinated policies and measures to promote local trip making.

- there has been a shift towards purchasing of larger private vehicles since about 1990. For environmental and safety reasons, it is important to reverse this trend and encourage purchase of smaller, more fuel efficient vehicles.
- vehicles powered by alternative fuels have not attracted market share during the past fifty years due to lack of significant commitment by government and the private sector to provide the necessary infrastructure and facilities.
- at the start of the twentieth century there are more households in Britain with two or more cars than without a car, although one quarter of households do not have a car. Recent increases in car ownership have particularly arisen from lower income households acquiring cars for whom this can present a serious financial burden.
- lower car ownership levels exist in the major conurbations which demonstrates how closer access to public transport and to jobs and amenities can reduce the need to acquire cars.
- the 1963 Beeching Plan enshrined the concept of the commercial railway that ensured large scale line and station closures and created an image of an industry in terminal decline.
- deregulation of buses in 1986 led to decreases in operating costs, but a decline in passenger numbers with the most substantial drop in Metropolitan areas outside London. Effective regulatory models for bus service operation are still being developed, but bus priority measures and network coordination appear to be essential features of successful local bus services.
- a slow and steady decline in walking has taken place over last fifty years. The public appreciates the value of walking for health and other reasons, but for many people destinations are not within walking distance and the street environment is not perceived to be pleasant.
- cycling has never been a major mode of transport in Britain as a whole, although in some places it is important. Public will not need to be persuaded to support major, long-term investment in cycling facilities (as has happened elsewhere in Europe) to achieve a major shift to cycling.
- there has been a steady decrease in road casualties in the last quarter of a century and road accident risk for motorists in Britain is as low as any major developed country. However, risks to pedestrians and cyclists are higher than many other countries which suggest efforts should be focused on making journeys safer for these modes.
- environmental consciousness grew strongly amongst the public in the 1980s leading to environmental considerations gradually become incorporated more into transport planning. Now climate change targets present a new challenge where public attitudes and political resolve will be needed to back action to decrease transport energy intensity.
- widespread initiatives to promote alternatives to the car since the mid 1990s through for example, Workplace Travel Plans, have stabilised car travel per person but not noticeably increased travel by alternative modes.
- at an aggregate level, our European neighbours travel in a similar way to us, but they offer specific ideas for us to emulate (e.g. rail in France, cycling in Netherlands) and there may be synergies from combining different ideas.

#### **Messages for the future**

- the length of motorway developed in Britain is lower per capita or land area than other developed countries, but the network provides good connectivity between urban centres and it is the capacity at critical points of the network that most urgently needs addressing.
- past forecasts of traffic growth can be considered to have been self-fulfilling to some extent and while current methods are more sensitive to policy assumptions, it is important to recognise that travel demand is subject to a wide set of influences, including social and psychological as well as economic influences.
- car ownership has grown continuously over the last fifty years, strongly driven by increased disposable income and decreased car purchase costs, but per capita levels remain lower than some other major developed countries. Future growth will be affected by vehicle purchase, taxation and fuel costs.
- after forty years of strong growth in car travel, the distance travelled by car per person has stabilised over the last ten years. It can be conceived that a turning point has been reached.
- a decrease in driving licence acquisition for those aged 30 and under has occurred since 1995. This offers an important opportunity (albeit a challenging one) to embed positive attitudes and behaviours towards alternatives to the car.

- the rail sector is grappling with the challenge of enhancing the existing network to address current overcrowding and accommodate future demand. Unless a huge injection of public investment can be justified, there is little scope for development of new high speed lines.
- travel has become more flexible (assisted by changes to working practices and the information age) and this is enabling increased mobility and access without significantly higher traffic and congestion. This gives hope that future adaptations of travel patterns will be possible without too much pain for the public.
- changes in British society and lifestyles in response to the motor car took place relatively rapidly over about forty years. It remains to be seen how quickly and fully the public are prepared to alter their lifestyles to adjust to a more mixed use of travel modes.
- the effectiveness of future transport policy and planning will depend on gaining public and political support for testing new ideas and being able to demonstrate the effectiveness to the public of policies/schemes.

## Look-up table of events

Year	General	Transport
1955	Churchill resigns as Prime Minister James Dean killed in car crash	Motorway network planned in Britain British Rail publishes Modernisation Plan
1956	Suez crisis	
1957	Treaty of Rome creates Common Market Launch of first Russian satellite	Government promotes London to Dover motorway and £17M expansion at Heathrow
1958	Munich air crash Mike Hawthorn becomes F1 World Champion	Preston Bypass opens, representing first motorway in Britain
1959	Buddy Holly dies in plane crash Harold Macmillan wins 'You Never Had It So Good' election	First hovercraft launched Mini launched
1960	Harold Macmillan's 'Winds of change' in Africa'	Britain to fund supersonic plane Traffic wardens introduced
1961	Berlin Wall built	E-type Jaguar launched
1962	Cuba missile crisis Marilyn Monroe dies 60 deaths from smog in London	'Panda' crossings introduced Government halves purchase tax on cars?
1963	Profumo sex scandal Beatlemania takes hold in Britain and USA President John F Kennedy assassinated	Traffic in Towns published Beeching Report on reforms of British Railways published
1964	Labour Party wins election with Harold Wilson Prime Minister	First ticket collecting machine on underground
1965	Death of Winston Churchill	Barbara Castle becomes Minister of Transport
1966	England win Football World Cup Height of 'Swinging Sixties' as London becomes fashion capital of the world	Freddie Laker starts independent airline 70 mile/hour speed limit on motorways BMC workers strike in protest at redundancies
1967	World's first heart transplant	Breathalyser introduced to combat drink driving
1968	Anti-Vietnam War demonstrations Martin Luther King and Robert Kennedy assassinated Mass student demonstrations in Paris USSR invades Czechoslovakia	National rail strike by NUR Strike at Ford's Dagenham plant Creation of British Leyland Transport Act sets up six Passenger Transport authorities and National Freight Corporation
1969	Neil Armstrong becomes first man on the moon	Concorde makes maiden flight 'Pelican' crossing introduced Oil discovered in North Sea
1970	Monty Python starts	First Jumbo jet lands at Heathrow
1971	Decimal currency introduced Riots in Ulster	Rolls Royce bankrupt
1972	Miners strike Watergate trial starts	Transport 2000 founded
1973	Three day week introduced in response to widespread strikes Britain joins European Economic Community Price of oil doubles	Japanese cars outsell British for first time London Motorway Box Plan abandoned Four separate cuts in trunk roads programme
1974	Edward Heath defeated in 'Who Governs Britain' election. Harold Wilson returns as Prime Minister President Richard Nixon resigns at climax of Watergate scandal	50 mile/hour motorway speed limit to conserve fuel Public Service Obligation introduced for rail Train drivers strike

Year	General	Transport
1975	End of Vietnam War	British Leyland nationalised to prevent collapse of company Moorgate underground crash
1976	Britain borrows £2.3 billion from the International Monetary Fund	First commercial flight of Concorde BR introduces 125 diesel trains Six month moratorium on all new starts in trunk road building
1977	Space shuttle makes maiden flight Death of Elvis Presley	Leitch Committee 1977 Abandonment of strategic trunk roads network Freddie Laker starts 'Skytrain'
1978	Shah of Iran driven into exile 'Winter of Discontent' in Britain Cambridge sink in boat race	
1979	Ayatollah Khomeini returns to Iran as Shah driven into exile Margaret Thatcher becomes Britain's first woman Prime Minister	Lorry drivers strike causes oil and food shortages Oil prices double to \$26 a barrel
1980	John Lennon shot dead	Government sells off Sealink and BR hotels French block Channel ports
1981	Riots hit British inner cities Ken Livingstone takes control of GLC	Leyland closes 3 plants and new alliance with Honda
1982	Falklands War Unemployment tops 3 million	De Lorean car company fails
1983	Thatcher wins landslide election	Publication of Serpell Plan on railway finances
1984	IRA bomb at Grand Hotel in Brighton where Margaret Thatcher was staying Year long Miners' strike	
1985	Mikhail Gorbachev becomes Soviet Union leader	Transport Act deregulates bus industry
1986	Chernobyl nuclear disaster	
1987		National Bus Company privatised
1988		BL privatised and becomes Rover
1989	Berlin Wall comes down	Roads to Prosperity £17bn trunk road expansion programme published
1990	Margaret Thatcher resigns as Prime Minister Nelson Mandela released from prison in South Africa	
1991	First Gulf War	New Realism published
1992	Britain forced out of European Exchange Mechanism Rio Earth Summit	Government announces intention to privatise the rail industry
1993		Twyford Down road protests
1994		BMW purchases Rover Cars SCATRA report on induced traffic published RCEP report Transport and the Environment catalogued adverse environmental impacts of road traffic growth Highways Agency set up Railtrack set up
1995		
1996		Large-scale anti-roads protests at Newbury Conservatives Green Paper 'Transport: the Way Ahead' published
1997	New Labour wins election with Tony Blair	Kyoto Protocol signed

Year	General	Transport
	becoming Prime Minister Princess Diana killed in Paris in car crash	Roads programme cut back to £6bn programme
1998		New Deal for Transport White Paper published, introducing Integrated Transport Policy
1999		
2000	Millenium Dome in London a commercial flop	Transport Ten Year Plan published Protestors block fuel depots in Britain and petrol shortages bring crisis for Blair government Hatfield rail crash and its aftermath cripples network through need to examine lines for broken rails
2001	9/11 terrorist attacks in USA	
2002		Select Committee publish critical report on Transport Ten Year Plan
2003	US and British troops invade Iraq	Railtrack goes into liquidation. Replaced by Network Rail Airports White Paper sets out government strategy for next thirty years Introduction of London Congestion Charge
2004		M6 Toll Road opened
2005		Rover Cars ceases production Tilting Pendolino trains introduced by Virgin on West Coast Main line.
2006	Stern report on economics of climate change published	Eddington report on transport and economy published
2007	Tony Blair resigns as prime Minister and succeeded by Gordon Brown Climate Change Bill introduced	Government announces intention to roll out use of the hard shoulder at peak times on motorways
2008	Boris Johnson succeeds Ken Livingstone as London Mayor	Honda produces the Clarity, the first commercially available hydrogen fuel cell car

## **1. Expansion of the road network**

### **1.1 'You never had it so good' and a new motorway age**

The 1960s was synonymous with the rapid expansion of the motorway network, although Britain was a relative latecomer to these types of roads. James Drake, County Surveyor for Lancashire, and one of the principal advocates for the construction of motorways, describes how he was strongly influenced by a visit he made to Germany in 1938 to examine the autobahn system under construction. In Hitler's Germany, there were obvious military connotations to this programme, but by the outbreak of war in 1939 there were 2,500 miles of autobahn operating in Germany, in Italy, by 1934 there were 330 miles of autostrade, and in the USA by World War Two there were 164 miles of four-lane and six-lane highway constructed in the New York Metropolitan area alone (Ref. 1.1, pages 27-34).

In Britain, a government plan for 800 miles of motorway construction had been published in 1946, but financial constraints meant that by a decade later none of this programme had been implemented. This situation could be contrasted with the United States, where the 1956 Federal Aid Highways Act undertook to provide federal aid on the basis of 90 per cent of the cost. This made possible the commencement of a plan for a national system of 41,000 miles of interstate highways, principally motorways (Ref. 1.1, pages 57-61).

In Britain, serious consideration for an expansion of the trunk road system only came in the late 1950s, when the government undertook to construct five major schemes: from London to Newcastle upon Tyne, built largely on the basis of the existing Great North Road; from London to Birmingham and on to Preston and the North West coast; from London to the South West, with a link across South Wales; from the Midlands to South Wales; and from London to the Kent coast and the Channel ports of Dover and Folkestone. However, in the event, the first motorway to be opened was the 8 mile Preston bypass (in Drake's home county) in 1958.

The opening ceremony for the bypass was performed by Prime Minister Harold Macmillan. This was highly significant for the expansion of the motorway programme. By the late 1950s, the years of post war austerity were coming to an end, and in the 1959 general election Macmillan campaigned on the consumer boom slogan of 'You Never Had it So Good.'

Perhaps the major characteristic of the relative prosperity was the rapid growth in registered cars, where the total more than doubled from 3.1 million in 1955 to 7.7 million in 1965 (Ref. 1.2, Table 9.1) and the number of households with a car doubled from 20 per cent to 41 per cent (Ref. 1.2, Table 9.14) (see Charts 1 and 21). Of much significance for the future was the government specifically rejecting the idea of tolls being charged to pay for the motorways, and instead expressed its intent for all the roads to be free at the point of use. In particular, at one point Macmillan suggested to his Transport Minister, Harold Watkinson, that they should consider charging tolls in certain cases. However, Watkinson saw the political dangers of this, and persuaded the Prime Minister that, apart from a few bridges and tunnels, tolls would not be appropriate for roads (Ref. 1.3, page 105).

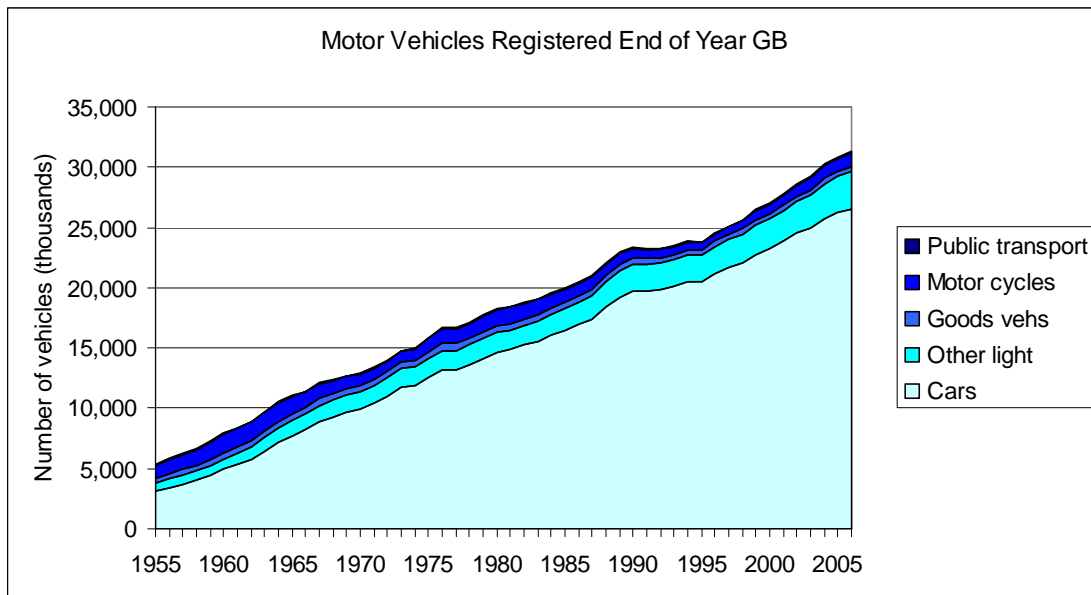


Chart 1. "Registered motor vehicles"  
(source: TSGB series, specifically Ref. 1.2, Table 9.1)

The expansion of the road construction programme was therefore intrinsically tied to the expansion of vehicle ownership (although it can be argued that over time this became a reciprocal relationship in which road expansion also encouraged the growth in car ownership). In 1962 the government announced a programme to construct one thousand miles of motorway over the following decade. By 1960, there was a total of 95 miles of motorway in use in Britain, but by 1964 this had grown to 300 miles and by 1970 the figure stood at 660 miles (see Ref. 1.2, Table 7.6) (see Chart 2). Averaged over the decade, there was just over one mile of motorway opened per week. However, this could be contrasted with the USA, where some twelve years after the start of the interstate highway system, about 2,400 miles were open to traffic, an average completion rate of around 40 miles per week (Ref. 1.4, page 50). (A comparison of national motorway lengths in major western European countries and Japan is provided in Chart 3 for the years 1974, 1984, 1994 and 2004. In Table 1 motorway lengths per person and land area are compared for the same countries plus the United States of America in 2004.)

Nevertheless, the ten year target of one thousand miles of motorway by 1972 was achieved. It could be said that the 1960s and early 1970s was the golden age of motorway construction in Britain when for those new to vehicle ownership they offered a revolution in personal mobility. The new motorways therefore chimed in perfectly with the upbeat 'Swinging Sixties' mood of greater social freedom and prosperity.

The era also saw the emergence of the motorway system as a separate world inhabited by its users. This was perhaps best symbolised by the development of service areas. The sites were usually chosen with gaps between them of around 25 miles. The first was opened alongside the M1 at Newport Pagnall in 1960, and by 1980 there were 42 in use in England and Scotland, although none in Wales (Ref. 1.4, page 258).

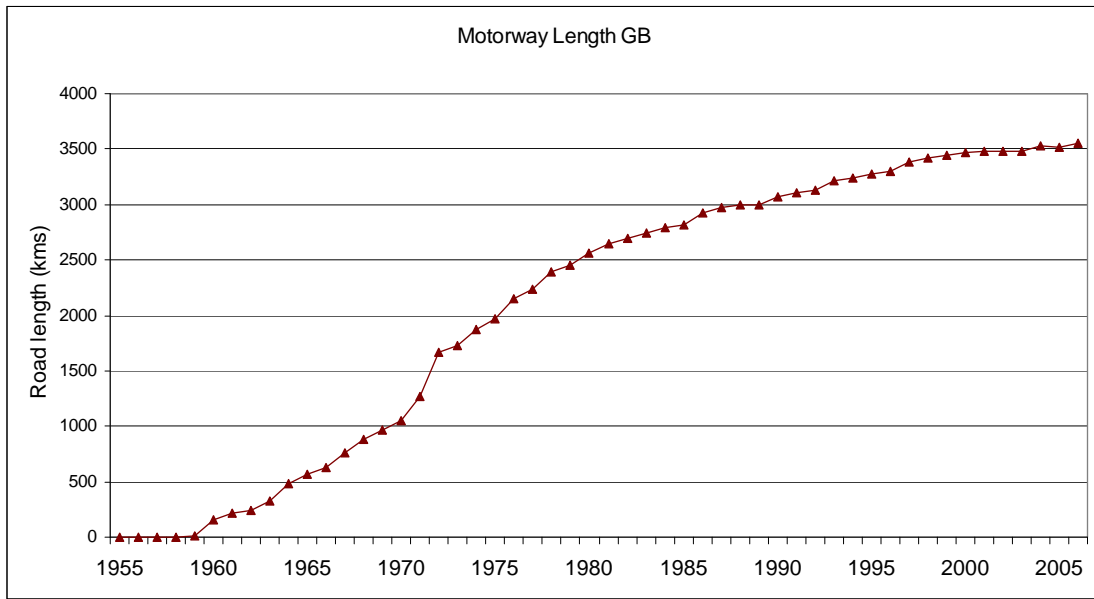


Chart 2. "Length of motorways"  
 (source: TSGB series, specifically Ref. 1.2, Table 7.6)

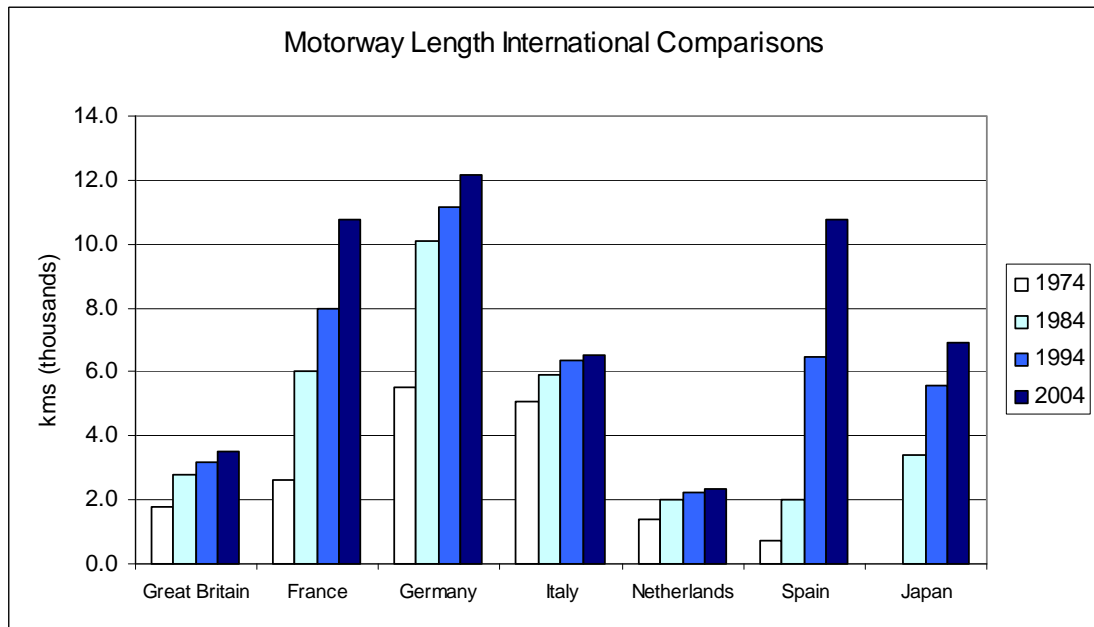


Chart 3. "International comparison of motorway lengths"  
 (source: TSGB series, including Ref. 1.2, Table 10.2)

(Notes: Germany 1974 figure applies only to West Germany; Japan data unavailable for 1974; United States had 81,100 km of interstate highway in 1984 and 91,000 km in 2004)

Table 1. “International comparison of motorway length 2004”  
(source: Ref. 1.2, Table 10.2)

Country	Motorway length (1,000 kms)	Motorway length per person (kms per million persons)	Motorway length per land area (kms per 1,000 square kms)
Great Britain	3.5	60	15
France	10.7	176	20
Germany	12.2	148	34
Italy	6.5	111	22
Netherlands	2.3	143	56
Spain	10.7	246	21
Japan	6.9	54	18
USA	91.0	307	10

The expansion of the motorway system was very much an inter-urban phenomenon. By 1970, there were only about 10 miles of urban motorway in use, with a similar mileage under construction (Ref. 1.4, page 50). In order to identify solutions to the increasing problem of urban traffic congestion, Ernest Marples, as Minister of Transport in 1960, appointed a committee led by Colin Buchanan to provide guidance. The 1963 Buchanan Report ‘*Traffic in Towns*’ (Ref. 1.5) outlined the physical changes that would be required in urban areas to accommodate expected increases in car ownership and traffic. The report highlighted that such changes would not be possible in the largest urban areas where there would need to be limitations on motor traffic along with improved public transport. In other urban areas there would need to be major physical redevelopment to accommodate the additional road space needed. The report suggested that even where limitations on motor traffic were pursued there would need to be substantial new road space to cater for ‘essential’ traffic.

In response to the report, the Ministry of Transport encouraged conurbation authorities to conduct large-scale Land Use Transportation Studies (LUTS) and when these were published from 1969 they generally recommended a combination of urban motorways and public transport schemes. Many of the major cities prepared plans along these lines, but by the early 1970s there was growing public opposition to these types of schemes once it was realised the impact they would have on the urban environment.

The most controversial of these schemes was the London motorway box, so called because it was a box-shaped ring motorway elongated in an east-west direction and running about four miles from the edge of the central area. The opening of the elevated Westway motorway in Western London in 1970 provided to the public a material indication of how the motorway box scheme would affect the urban landscape.

The motorway box plan was quashed when Labour took control of the Greater London Council in 1973 (Ref. 1.6, page 62). Similarly, in Britain in the early 1970s, about two dozen cities had populations greater than 200,000. Of these, around half a dozen had by the early part of 1973, abandoned, or at least temporarily suspended, plans to build extensive highway systems. As Starkie comments, although some cities, such as Glasgow, Liverpool and Leeds, pressed on with their own schemes with undiminished enthusiasm, the shock had registered (Ref. 1.7, page 90).

Nevertheless, although several of the most controversial schemes were abandoned, it should be noted that, during the 1970s, there was significant growth in the urban motorway system. For example, by 1979, in the six Metropolitan English Counties of Greater London, West Midlands, Greater Manchester, Merseyside, West Yorkshire and Tyne and Wear, there was a

total of 265 miles of motorways (Ref. 1.4, page 195). Although several of these might be classed as inter-urban, it emphasises that many cities remained committed to the construction of urban motorways, at least as outer ring roads. It could also be argued that residents in these cities lacked the resources of their London counterparts to oppose these plans.

## **1.2 Hard times**

Prior to 1973, it was largely assumed that the trunk roads construction programme, and particularly the inter-urban motorways, would continue to grow unabated in order to match the rapid growth in vehicle numbers. However, two external events in that year combined to blow off course this apparently inexorable progress. Firstly, the Conservative government had embarked on a policy of reflation known as 'the dash for growth.' In the event, the economy became over-heated, and from May 1973 Chancellor of the Exchequer Tony Barber imposed a series of public expenditure cuts. Secondly, the Middle East war of the Autumn led the oil producers' cartel OPEC to quadruple the price of oil. This meant that, in 1974, Britain would be paying £2.5 billion more for 5 per cent less oil than had been imported in 1973 (Ref. 1.8, page 397).

This all meant that, after being relatively insulated from the vagaries of public expenditure cuts, the roads programme suddenly appeared an exposed and vulnerable target for Ministers seeking immediate cuts. In 1973, therefore, there were four separate cuts to the roads programme, culminating in the mini-budget of December which announced a 20 per cent cut in all capital spending on new road construction. The pressure on the UK economy continued to intensify, and by 1976 the intervention of the International Monetary Fund led to three further cuts in the roads programme. Indeed, the mini-budget of December 1976 included a six month moratorium on all new starts in trunk road building (Ref. 1.3, page 129).

There is no doubt that the rate of growth in traffic slowed down considerably in 1973. Annual vehicle kilometres increased from 212 billion kilometres in 1971 to 234 billion kilometres in 1973, but this figure decreased to 232 billion kilometres in 1975 before increasing again to 247 billion kilometres in 1977 (Ref. 1.2, Table 7.1) (see Charts 4, 5, 6 and Table 2). This illustrates that, if only in moderating the rate of growth, the optimism of the 'Swinging Sixties' had been undermined significantly. As we will see in Section Six, from the mid 1970s environmental protests at highway public inquiries also badly affected the public image of the roads programme.

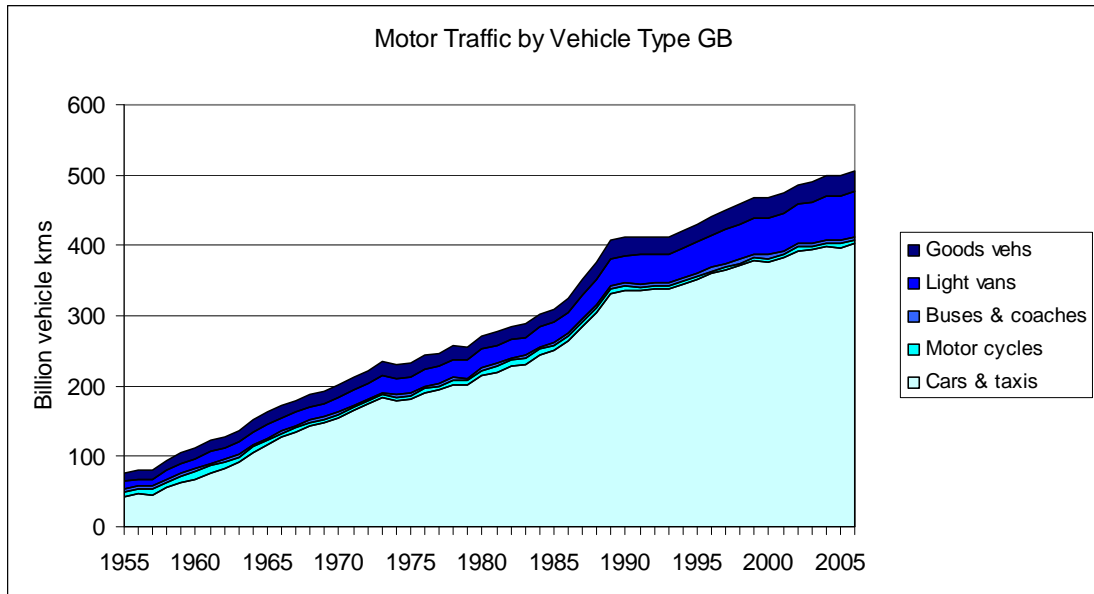


Chart 4. "Motor traffic by vehicle type"  
 (source: TSGB series, specifically Ref. 1.2, Table 7.1)

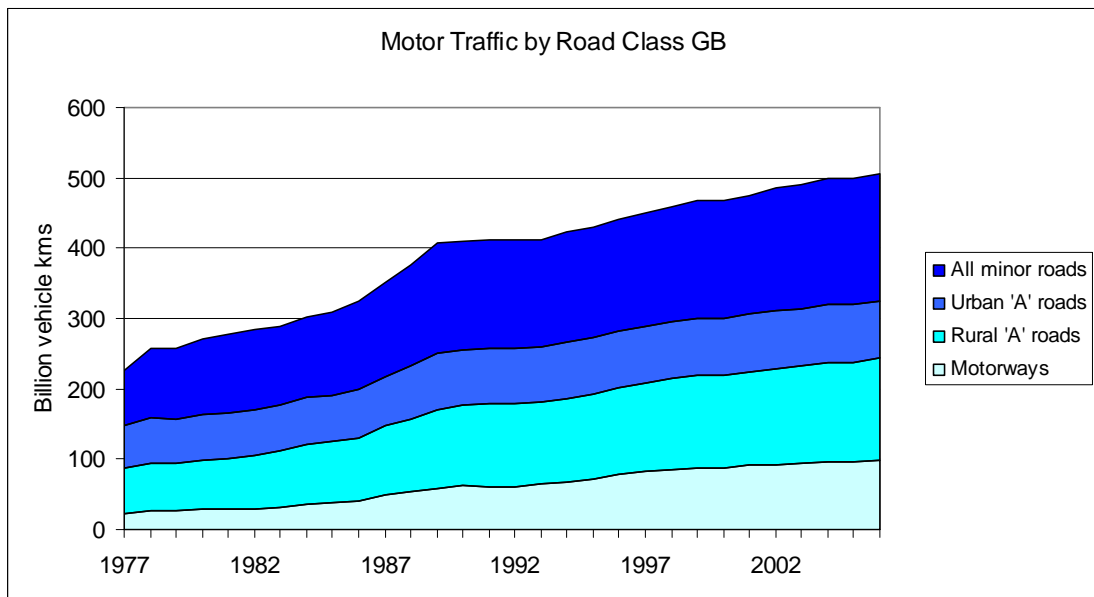


Chart 5. "Motor traffic by road class"  
 (source: TSGB series, including Ref. 1.2, Table 7.3)  
 (Note: Data before 1977 uses different road class classification and is not comparable)

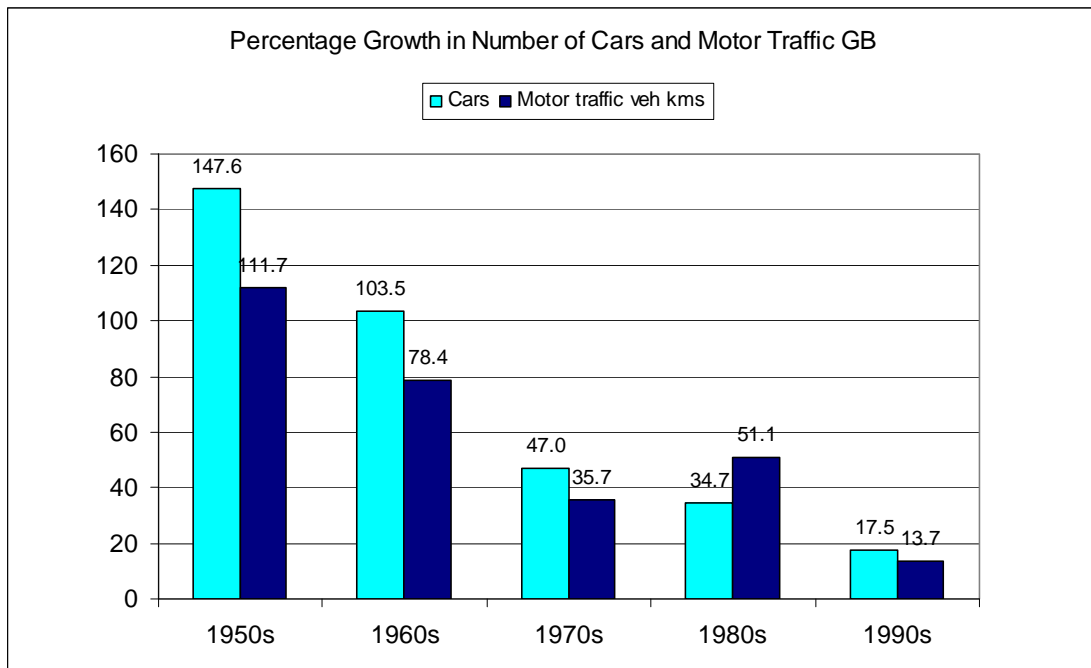


Chart 6. “Percentage growth in number of cars and motor traffic”  
(source: TSGB series, specifically Ref. 1.2, Tables 7.1 and 9.1)

Table 2. “Percentage growth in number of cars and motor traffic past and future”  
(source: TSGB series, specifically Ref. 1.2, Tables 7.1, 7.5 and 9.1)

Decade	No. cars	Motor traffic
1950s	147.6	111.7
1960s	103.5	78.4
1970s	47.0	35.7
1980s	34.7	51.1
1990s	17.5	13.7
2000-2005	13.0	6.9
Forecast 2000-2015*	25	29
Forecast 2000-2025*	40	38

\* Forecasts of number of cars applies to GB and forecasts of motor traffic applies to England

By 1977, the Labour government had decided to abandon the concept of a strategic trunk roads network that had guided government policy since the late 1950s. Instead, there was to be a more selective approach, that entailed dealing with the worst stretches first, and varying the standard of a road throughout its length to reflect the different degree of use (Ref. 1.9, paras. 248-9). The reassessment of the roads programme was consolidated by the findings of the government appointed Leitch Committee, that was given the task of examining the Department of Transport’s method of appraising trunk road schemes. The Committee came to the important conclusion that a shift of emphasis was required away from valuations in money terms towards a comprehensive framework which would embrace all the factors and groups of people affected in a scheme assessment (Ref 1.10, paras. 28.3.4).

These major policy shifts were reflected in huge reductions in trunk roads expenditure. Consequently, in 1973-74 (at 1979 prices), total expenditure on new construction and improvement and maintenance on British roads totalled £847 million, but by 1977-78 this figure had slumped to £498 million, although by 1980-81 it had recovered somewhat to £530 million (Ref. 1.3, page 85).

In 1977, there were 2,237 kilometres of motorway in Britain, an increase from 761 kilometres in 1967. On the other hand, some classes of roads showed relatively small increases. For example, classified principal roads rose only from 32,543 kilometres in 1967 to 33,598 kilometres in 1977 (Ref. 1.2, Table 7.6) (see Charts 7 and 8). This suggests that the emphasis on the motorways programme left relatively small resources for improving other roads. Here, the changes represented mainly incremental improvements such as bypasses and minor developments of rural roads. However, after the austerity of the 1970s, the 1980s was to bring a change of fortune for the roads programme.

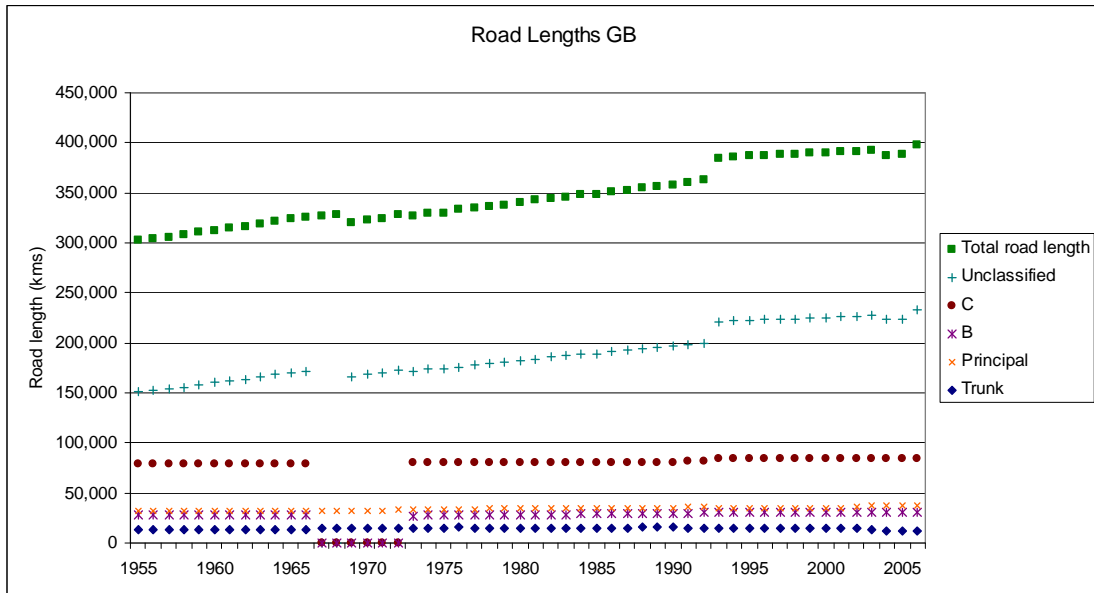


Chart 7. "Road lengths"

(source: TSGB series, specifically Ref. 1.2, Table 7.6)

(Note: changes made in methods of measuring road lengths in 1993 and 2006 (minor roads only); data unavailable for B, C and unclassified roads between 1967 and 1972)

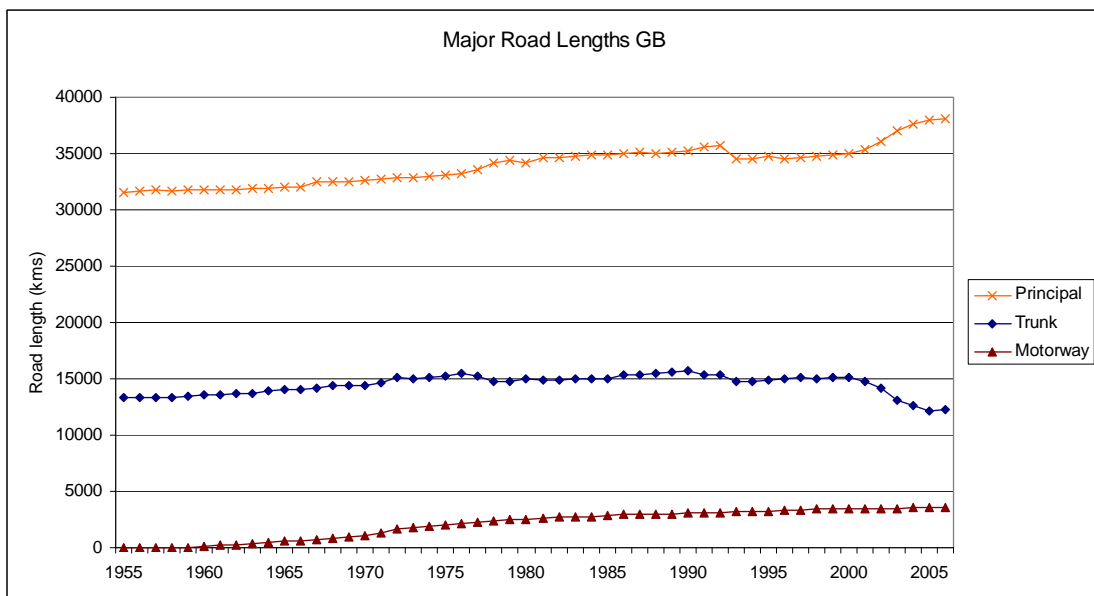


Chart 8. "Major road lengths"

(source: TSGB series, specifically Ref. 1.2, Table 7.6)

(Note: detrunking programme has affected principal and trunk road lengths since 2001; changes made in methods of measuring road lengths in 1993)

### 1.3 'Roads for Prosperity'

After the difficulties of the 1970s, the political and financial climate for the roads programme shifted greatly in the 1980s and early 1990s. Significantly, the oil price steadied, with the result that levels of traffic resumed their upward momentum. After the growth of the motorway network in the 1960s and 1970s, the rate of growth slowed significantly in the 1980s, so that the number of motorway kilometres increased from 2,556 in 1980 to 3,070 in 1990 (Ref. 1.2, Table 7.6) (see Chart 2). Other trunk roads only increased in length from 12,393 kilometres in 1980 to 12,596 kilometres in 1990. The number of vehicles per kilometre of road (all roads) increased from 57 in 1980 to 69 in 1990 (Ref. 1.11).

Politically, the mood towards the value of road building changed markedly in the 1980s. The Conservative government, led by Margaret Thatcher, believed strongly in the virtues of personal mobility and freedom of the individual. The Prime Minister referred to 'The Great Car Economy' and personally favoured strongly road over rail travel. Given the commitment of the government to these values, it is not surprising that expenditure on new construction and capital and current maintenance in England increased by 10 per cent in real terms in the three year period 1987-88 to 1989-90 compared with the three year period 1984-85 to 1986-87 (Ref. 1.12, para. 2.1) (see Charts 9, 10 and 11).

This rapid increase is accounted for by the government's major reappraisal of roads policy in 1989 published as the White Paper *Roads for Prosperity* (Ref. 1.13). The new policy was triggered by the 1989 National Road Traffic Forecasts which predicted that total traffic would rise between 83 and 142 per cent by the year 2025. The wide span of this forecast was accounted for by different rates of projected economic growth. See Box 1 for an examination of the accuracy of national traffic forecasts and the implications of this for policy.

The new *raison d'être* of trunk roads policy therefore rested less on the consumerist values of the 1950s and 1960s, but more as a reflection of a perceived general economically expansionary future based on Thatcherite ideas of popular capitalism. Hence the title of the White Paper, that set out plainly the new policy:

*"The government's conclusion is that the main way in which to deal with growing and forecast inter-urban road congestion is by widening existing roads and building new roads in a greatly expanded road programme. The scale of the problem is such that it can be relieved only by a step change in both the size and composition of the programme."* (Ref. 1.13, para. 16)

The size of the 'step change' was spelt out in an expanded programme of over £6 billion. When this was added to the existing programme, the total trunk roads programme would be more than doubled (Ref 1.13, paras. 28-29). Motorway widening schemes would dominate the early stages of the expanded programme, as it was considered in general to be faster and easier to widen existing roads than to build entirely new ones.

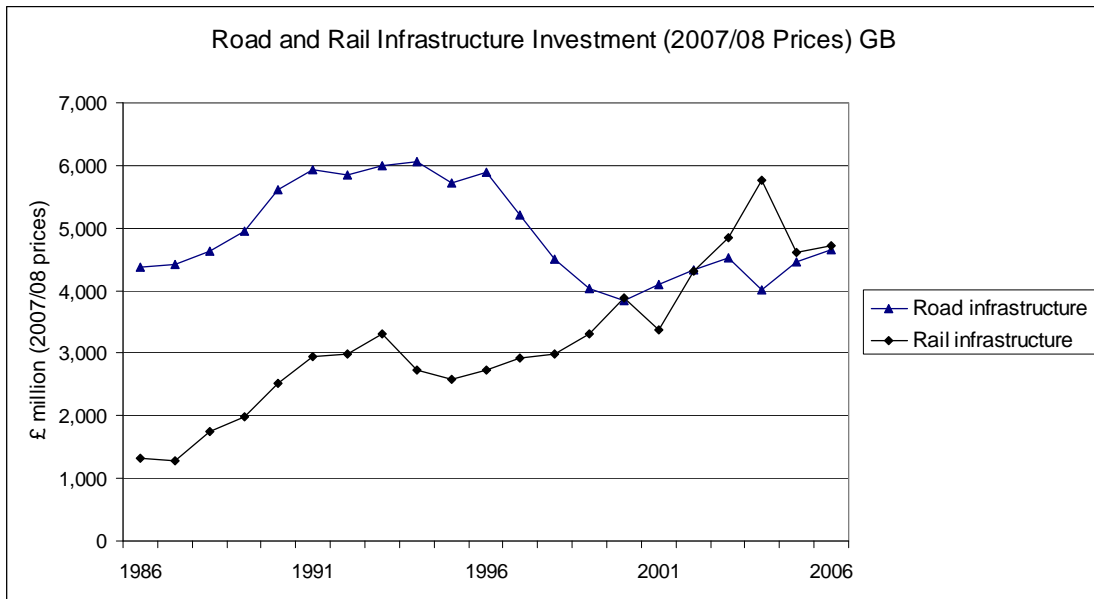


Chart 9. "Road and rail investment"  
 (source: TSGB series, specifically Ref. 1.2, Table 1.14 and Ref. 1.5, Table 1.15)

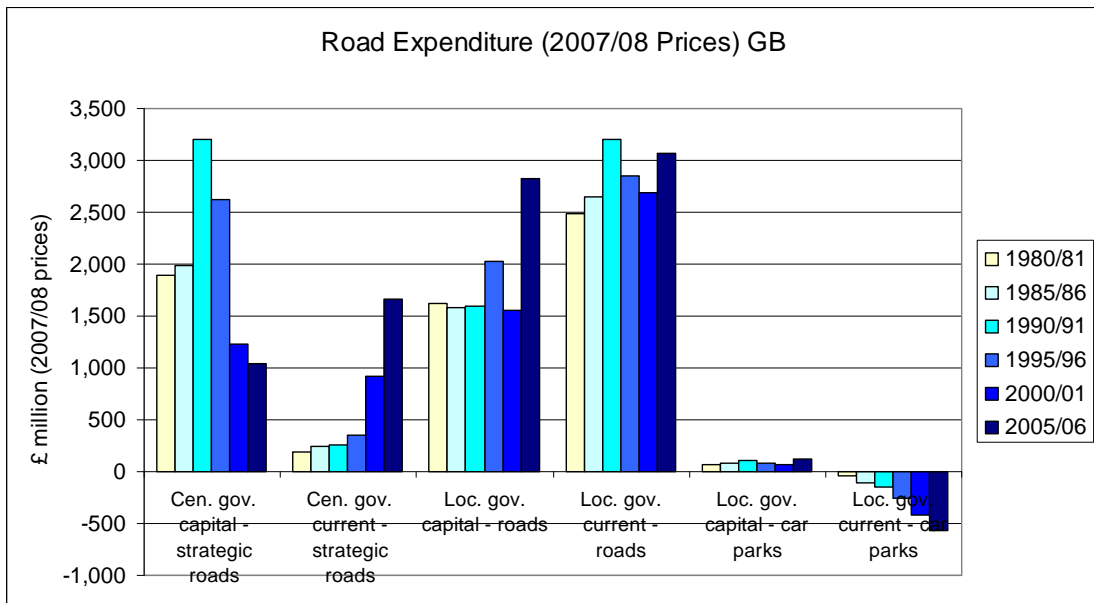


Chart 10. "Road expenditure"  
 (source: TSGB series, including Ref. 1.2, Table 1.15)

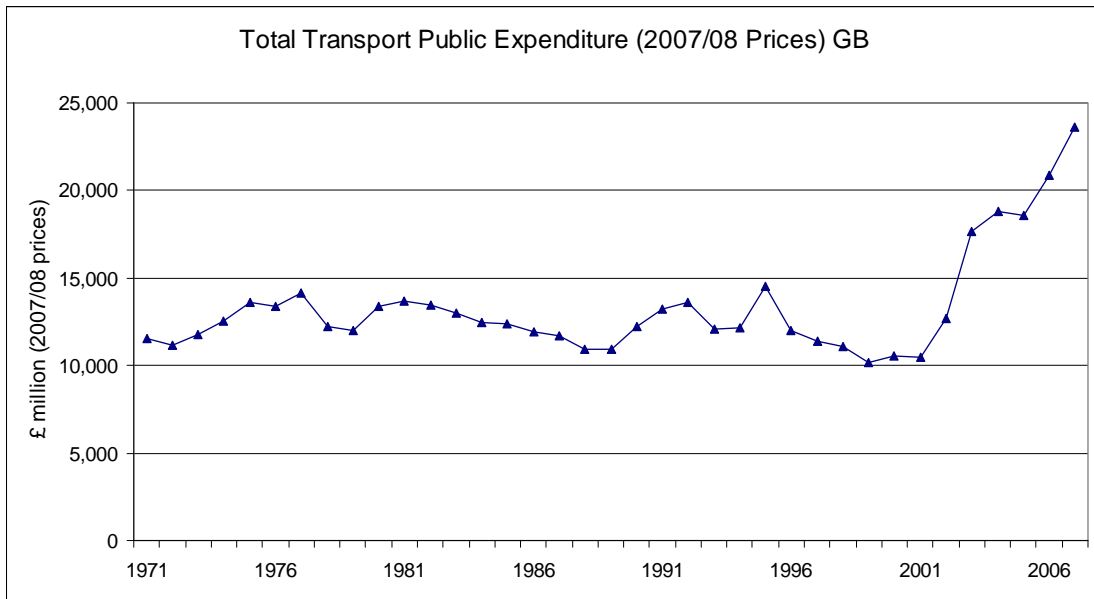


Chart 11. "Total transport public expenditure"  
 (source: TSGB series, including Ref. 1.2, Table 1.15)

## Box 1. “The role and accuracy of national traffic forecasts”

Long-term forecasts of national road vehicles and traffic in Great Britain have been made since Tanner’s work in 1962 (Ref. 1.14) and have played an instrumental role in roads policy and investment. It is informative to examine how successful these forecasts have been and the implications for policy.

An examination of the performance of forecasts made between 1969 and 1989 (Ref. 1.15, Annex A) showed that they overestimated traffic growth up to 1985 due to optimistic expectations of economic growth and the oil price shocks in the early 1970s. The NRTF 1984 forecasts significantly underestimated growth in road traffic with the outturn traffic growth in 1990 exceeding the high growth forecast by 16 per cent (see Chart 12). This was explained to be due to stronger economic growth than anticipated. Concern about higher traffic growth than had been foreseen (and associated congestion) was a key factor in the very large scale of the 1989 roads programme. Subsequently, the NRTF 1989 forecasts (Ref. 1.16) significantly overestimated traffic growth with the outturn traffic growth in 1995 less than the low growth forecast by 2 per cent (see Chart 13). From 1994 the roads programme started to be scaled down. The NRTF 1997 forecasts (Ref. 1.15) have been more accurate with the outturn traffic growth in 2006 midway between the low growth and central growth forecast (see Chart 14).

Over time the methodology used in the forecasts has become more sophisticated. Prior to 1997 forecasts could be interpreted as being of unconstrained traffic demand. The forecasts involved forecasts of car ownership followed by car use. The future occurrence of saturation levels of car ownership was anticipated, but no supply side restriction on car use was taken into account. The main factors taken into account were population and household size and economic growth. Fuel price was introduced as a factor in 1975 forecasts after the oil price shocks. With NRTF 1997 the capacity constraints of the road network started to be taken into account. With the evolution of NRTF into the National Transport Model (NTM), at the time of the 2000 Ten Year Plan (Ref. 1.17), the forecasting framework moved from single mode (private road travel) to multi-modal and policy sensitivity was increased. In particular, the implications of implementing different road pricing options were able to modelled.

In the Ten Year Plan it was forecasted that there would be traffic growth in England of 22 per cent by 2010 (over 2000 levels) without policy intervention and growth of 17 per cent with the Plan. Forecasts were also made of changes in congestion (based on lost time per vehicle kilometre) with congestion growth of 15 per cent without policy intervention and congestion reduction of 6 per cent with the Ten Year Plan. Many proposed measures in the Ten Year Plan will not be implemented by 2010, however, hence it is difficult to assess the accuracy of the forecasts. However, outturn traffic growth of 8 per cent occurred between 2000 and 2006 in Great Britain, suggesting traffic growth had been overestimated. Also, as discussed in Box 2, congestion appears to have increased significantly since 2000. In fact, the congestion forecasts in the Ten Year Plan were subject to some debate after they were published and were revised upwards in a progress report on the Ten Year Plan published in 2002 (Ref. 1.18).

The forecasts made using the NTM in the 2004 White Paper *Future of Transport* (Ref. 1.19) suggested traffic growth of 26 per cent by 2010 (over 2000 levels) in England with continued application of Ten Year Plan policies and spending. By 2025 traffic growth was 40 per cent was forecasted. No forecasts were made for congestion due to the need for further development of analytical capabilities to estimate this. The 2006 Eddington report (Ref. 1.20) included central forecasts for 2025 for England of a traffic increase of 31 per cent and congestion increase of 30 per cent over 2003 levels. Most recent work by DfT (Ref. 1.21) with the NTM in 2007 has led to the same traffic increase forecast of 31 per cent (with low range value of 20 per cent and high range value of 39 per cent) and the congestion increase forecast to be updated to 28 per cent (this represents a 4 per cent increase in average time travelled per kilometre). Testing for the impact of a national road pricing scheme indicated that 2025 forecasts for traffic would be reduced by 7 per cent and congestion reduced by 52 per cent.

A key criticism levelled at the national traffic forecasts (especially prior to 1997) is how they have been used by policy makers to guide the scale of road investment with little if any consideration to constraining the forecasted demand. They have been said to be self-fulfilling. It is clear that the forecasts made since 1997 are more sensitive to assumptions about policy implementation and have allowed alternative policy strategies to be assessed. While the NTM recognises a much larger number of determinants than the previous NRTF procedures, there will continue to be determinants absent from the modelling framework (and sensitivities that will change in the future) which will continue to challenge our ability to make forecasts and interpret them wisely.

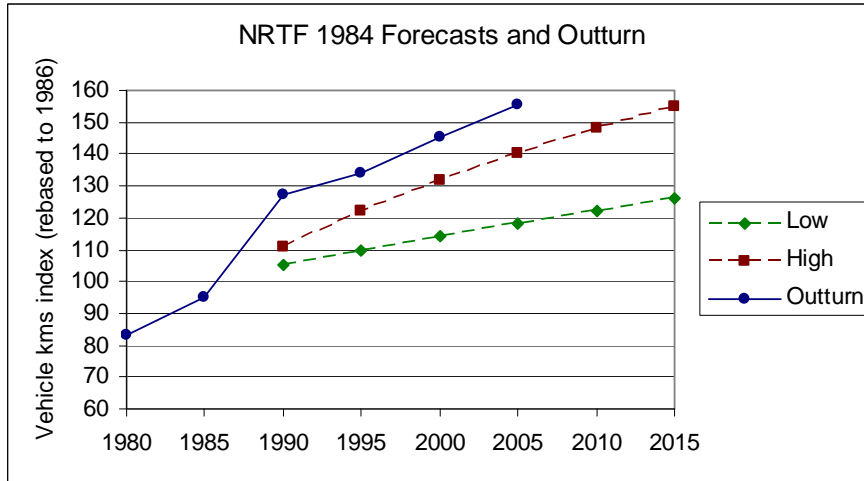


Chart 12. "NRTF 1984 forecasts" (source: Ref. 1.22, Table 2.42)

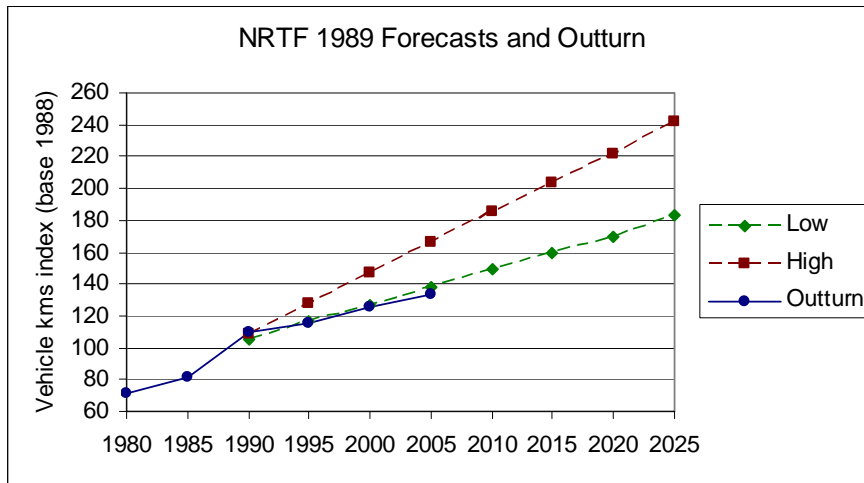


Chart 13. "NRTF 1989 forecasts" (source: Ref. 1.16, Table 6)

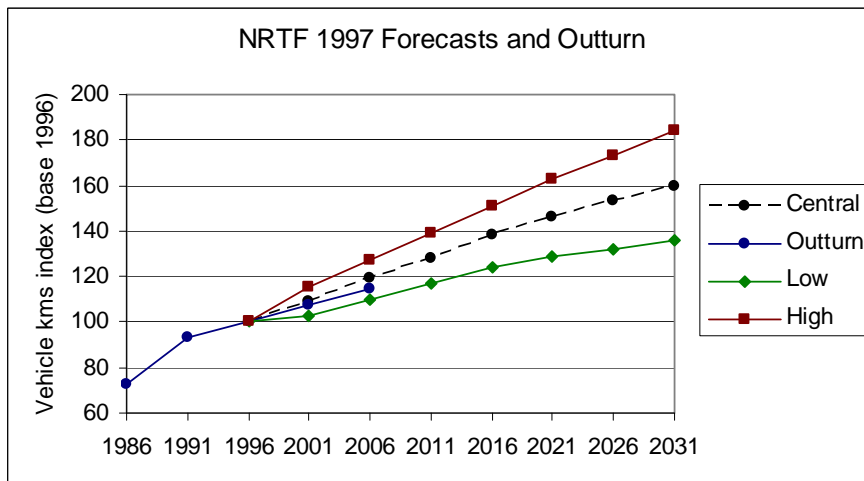


Chart 14. "NRTF 1997 forecasts" (source: Ref. 1.15, Table 2)

A follow up to *Roads for Prosperity* was published in 1990 that set out the plans for trunk roads in England (Ref. 1.12). It made the point that although trunk roads represented only 4.4 per cent of the total mileage of roads, they carried 31 per cent of all traffic, including 54 per cent of heavy goods traffic (Ref. 1.12, para. 1.1). Given the policy emphasis on supplying roads to match economic growth, this clearly indicated where the government considered the greater part of investment should be allocated. The 1990 Report also emphasised that nearly two thirds of households now had regular use of a car, compared with only 14 per cent in 1951. In addition, over the same period, goods moved (tonne kilometres) by road had increased four-fold with the share of all goods moved inland (excluding waterborne and pipeline) nearly doubling from 46 per cent to 88 per cent (see Charts 15 and 16). It was concluded that these changes had placed considerable demands on the road system, and the trunk roads in particular (Ref. 1.12, para. 1.3).

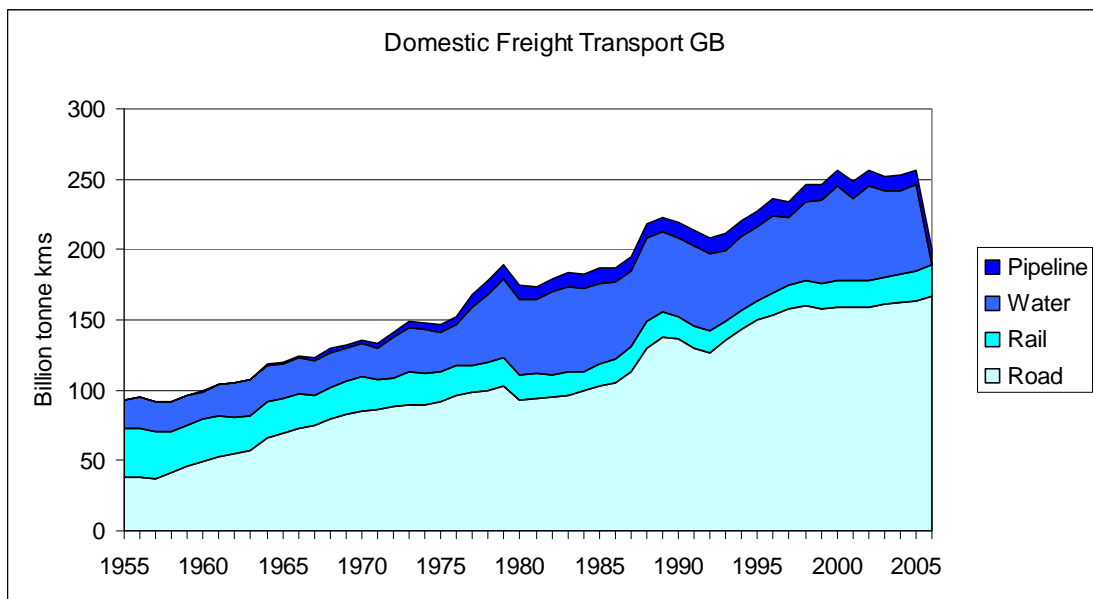


Chart 15. "Domestic freight transport moved by mode"  
(source: TSGB series, specifically Ref. 1.2, Table 4.1)

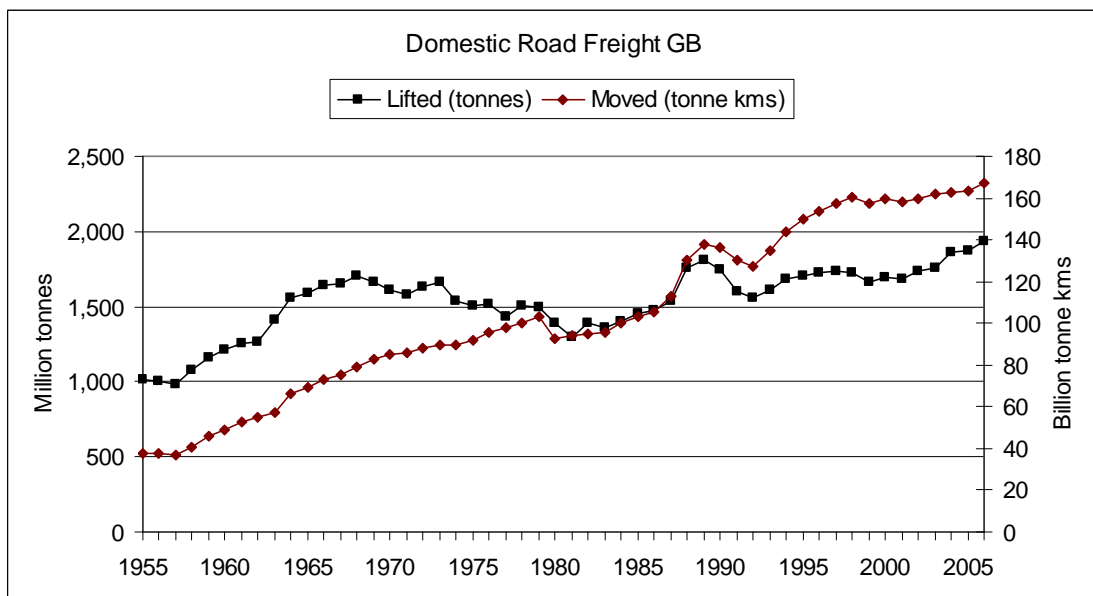


Chart 16. "Domestic road freight transport lifted and moved"  
(source: TSGB series, specifically Ref. 1.2, Table 4.1)

In the early to mid 1990s, the government, perhaps surprisingly given the economic climate, particularly the repercussions of Britain's withdrawal from the EU Exchange Rate Mechanism in 1992, was able to attain the expenditure increases set out in *Roads for Prosperity*. Consequently, total trunk roads expenditure in Great Britain increased from £1.639 billion in 1989-90 to £2.484 billion in 1993-94. Significantly, despite the White Paper emphasis on trunk roads, local authority capital expenditure on roads showed similar increases over the same period, rising from £562 million in 1990-91 to £946 million in 1993-94, although by 1994-95 the figure had fallen back to £834 million (Ref. 1.11) (see Charts 9 and 10).

Since 1936, the government had been directly responsible for the construction and maintenance of trunk roads, but in 1994 it set up an arm's-length Highways Agency (HA) to take executive responsibility for this function. Understandably, given the huge resources required to implement the *Roads for Prosperity* programme, the HA was keen to identify alternative sources of finance. Hitherto, private finance had played little part in the roads programme, but the door to this resource had been opened by the *1991 New Roads and Street Works Act* that provided for private sector concessionaires to design, build, finance and operate new roads in return for the right to charge tolls on them. In addition, the launch of the Private Finance Initiative in 1992 enabled the implementation of any privately financed project which could be operated profitably. Consequently, in 1993 the government entered into a concession agreement with Midlands Expressway for the construction of the Birmingham Northern Relief Road, running as an alternative to the M6 between Junctions 4 and 11 of that road (the road, known as the M6 Toll, was opened in 2004). In addition, four projects were chosen as Design Build Finance and Operate (DBFO), whereby 'shadow tolls' would be paid to a concessionaire by government on the basis of the level of traffic using the road before and after improvement (Ref. 1.23).

However, even as the *Roads for Prosperity* programme appeared to be gaining an unstoppable momentum, factors were combining that would seriously undermine it.

#### **1.4 The impact of the 'New Realism'**

An alternative to *Roads for Prosperity* was presented by the influential 1991 Report that set out the terms of *The New Realism* (Ref. 1.24). As with *Roads for Prosperity*, *The New Realism* took as its starting point the 1989 National Road Traffic Forecasts, but came to very different conclusions:

*"Overall, our approach is to start with a conception of the sort of town that people want to live in and consider the amount of traffic that can be sustained successfully by the best possible combination of environmental and public transport improvements. In general, this will fall far short of the total potential demand for movement by private car, at least under current attitudes and projections. The provision of new road space will not meet this potential, though it might give cause to increased expectations for doing so. Therefore 'meeting the demand' is an inappropriate justification for new road construction. In these circumstances, it is sensible to consider the need for new road construction last instead of first."* (Ref. 1.24, page 139)

The Report therefore recommended a policy mix which would include a substantial improvement in public transport, traffic calming, advanced management systems and road pricing (Ref. 1.24, pages 165-6).

As we will see in Section Six, in the mid 1990s the roads programme came under sustained and intense assault from a wide alliance of the environmental lobby. In addition, the

conclusions of *The New Realism* were reinforced by the findings of the Standing Advisory Committee (SACTRA) Report on *Trunk Roads and the Generation of Traffic*. SACTRA concluded that induced traffic occurred probably quite extensively (Ref. 1.25, para. 15.03), so that new roads attracted new traffic that limited the congestion relief provided and in turn created a demand for more new roads.

The assault on *Roads for Prosperity* caused the government to review its transport strategy. A 'Great Debate' was launched, and from 1995 there were significant cutbacks in the trunk roads programme. For example, in the Budget of 1994, planned expenditure on trunk roads was cut from £2.1 billion in 1994-95 to £1.7 billion in 1997-98. When a Labour government took over in 1997, it seemed initially that the policy on roads would remain unchanged. Consequently, the Transport White Paper of 1998 stated that the main aim of transport policy would be to increase personal choice by improving the alternatives and to secure mobility that was sustainable in the long term (Ref. 1.26, page 3). On trunk roads, it was stated explicitly that the days of 'predict and provide' were over, and that top priority would be given to improving the maintenance and management of existing roads before building new ones (Ref. 1.26, para. 3.123). Alongside the White Paper, the government conducted a review of trunk roads policy, in which 37 schemes, out of 147 inherited by the government, were placed in the targeted programme, while 36 schemes were withdrawn from the programme. (Ref. 1.26, page 10).

However, by the time the government published a Ten Year Plan in 2000 (Ref. 1.27) it was clear that something of a rethink had taken place. The Plan estimated that traffic levels on the strategic roads network would grow by 29 per cent over the next ten years and although it was argued that simply building more and bigger roads was not the answer, it was clear that Ministers had become concerned about the costs of being perceived as 'anti-motorist,' with the result that the Ten Year Plan envisaged significant increases in roads expenditure. Most significantly, it was now intended to widen around 5 per cent of the strategic roads network, some 350 miles, with associated junction improvements. Overall, the highly ambitious aim was to reduce congestion on inter-urban roads to 5 per cent below current levels by 2010 compared with current forecast growth of 28 per cent (Ref 1.27, paras. 6.32-33). In terms of public and private annual expenditure on strategic roads at outturn prices, the figure was due to increase from £1.4 billion in 2000-01 to £3.1 billion in 2010-11 (Ref 1.27, page 99).

Although the new plans were a long way short of the programme set out in *Roads for Prosperity*, it was clear that the government was seeking some degree of settlement between *Roads for Prosperity* and *The New Realism*. Ministers' sensitivity on these issues was undoubtedly further heightened by the dramatic fuel protests of September 2000 that for a brief period threatened to bring the government to the point of collapse. The result is that investment in road infrastructure rose steadily since 2000-01 (see Charts 9 and 17). Consequently, investment reached a peak in 1992-93 of £6.4 billion at 2004-05 prices. Investment fell between 1992-93 and 1999-2000, but rose then by a third to £4.7 billion in 2004-05. Similarly, maintenance expenditure on trunk roads (including motorways) also fell in the mid-1990s, but between 2001-02 and 2004-05 increased by 10 per cent to £910 million at 2004-05 prices. In addition, maintenance expenditure on non-trunk roads fell by 28 per cent in the years 1994-95 to 1998-99, but has increased each year since to £2.9 billion in 2004-05. Significantly, despite the hopes for DBFO schemes, private investment in road infrastructure has continued to remain a relatively small proportion of total investment. Consequently, although it had risen to 9 per cent of total investment in the late 1990s, by 2001/02 the private share of investment had fallen to 1.2 per cent (Ref. 1.2, Table 1.14).

Notwithstanding the increases in expenditure, considerable opposition has been encountered with regard to the environmental impacts of widening the motorways, while the costs of these schemes also continue to rise. There is therefore considerable potential significance in the government's 2007 announcement that it intends to roll out the use of the hard shoulder at

peak times on motorways. This programme could therefore be seen as a relatively inexpensive alternative to the planned widening of these roads.

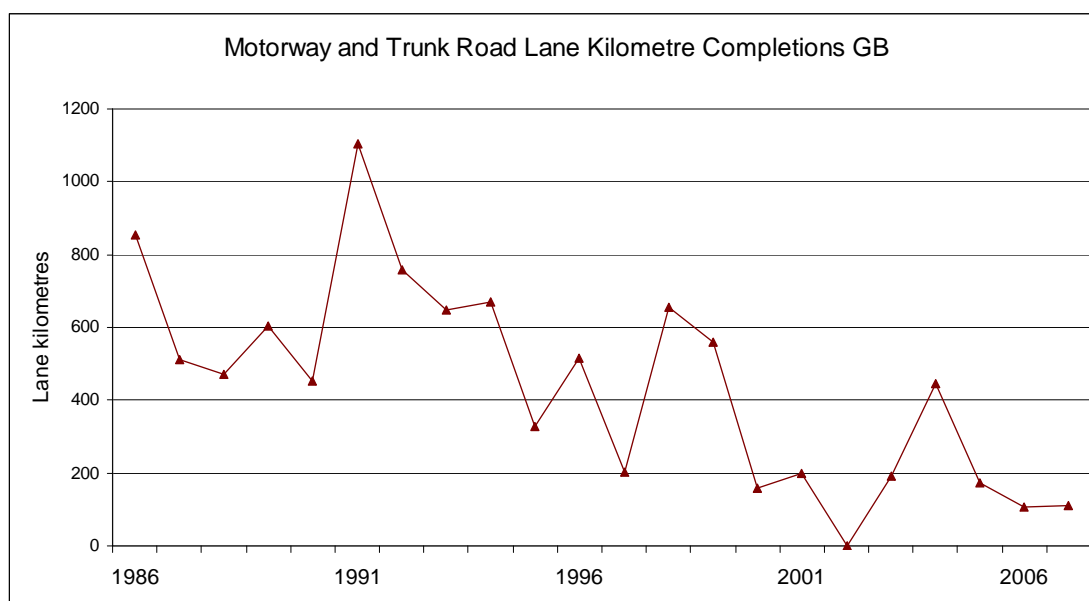


Chart 17. “Motorway and trunk road lane completions”  
(source: TSGB series, including Ref. 1.2, Table 7.16)

### 1.5 Long term trends

The expansion of the road network has strongly influenced development and patterns of travel. Consequently, roads enabled urban areas to expand and for people to live further away from workplaces and amenities in urban areas and to travel by car to get to them. This is evident from Chart 18 which shows a shift in population from inner urban areas to outer urban areas, new towns, coastal areas, rural areas and, most substantially, to mixed urban/rural areas.

There are implications of this movement of population for use of motorways. Motorways are commonly now used by motorists for daily journeys in their local area, rather than long distance travel (this is especially true for motorways in and around conurbations). For example, roadside interview surveys in 2003 at five motorway junctions in the Bristol area (Junctions 1, 2 and 3 on M32 and Junctions 16 and 17 on M5) showed that between 88 per cent and 93 per cent of commuters entering the motorway at these junctions was travelling to destinations in the Bristol area (defined as the four unitary authorities in the area) (Ref. 1.28, Table 2.1).

Roads have also attracted retail and light industry which has moved out from established urban areas. Chart 19 shows how new retail development increasingly became concentrated in out of town shopping centres and retail warehouse parks during the 1980s and 1990s. The development of the motorway and trunk road system has also led to consolidation of goods distribution centres to fewer locations. This is a contributory factor to increases in the length of haul, reflected in the statistic that tonnes of goods lifted for movement by road increased by 84 per cent between 1955 and 2005, while tonne kilometres of goods moved by road increased by 329 per cent (see Charts 15 and 16).

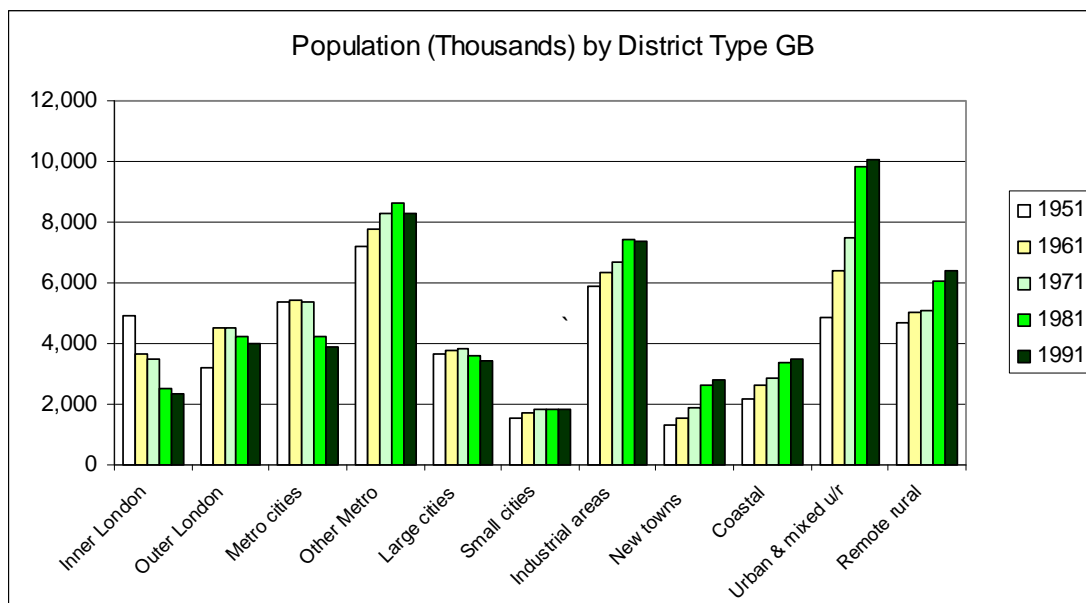


Chart 18. "Population by district type"  
(source: Ref. 1.29, Table 7)

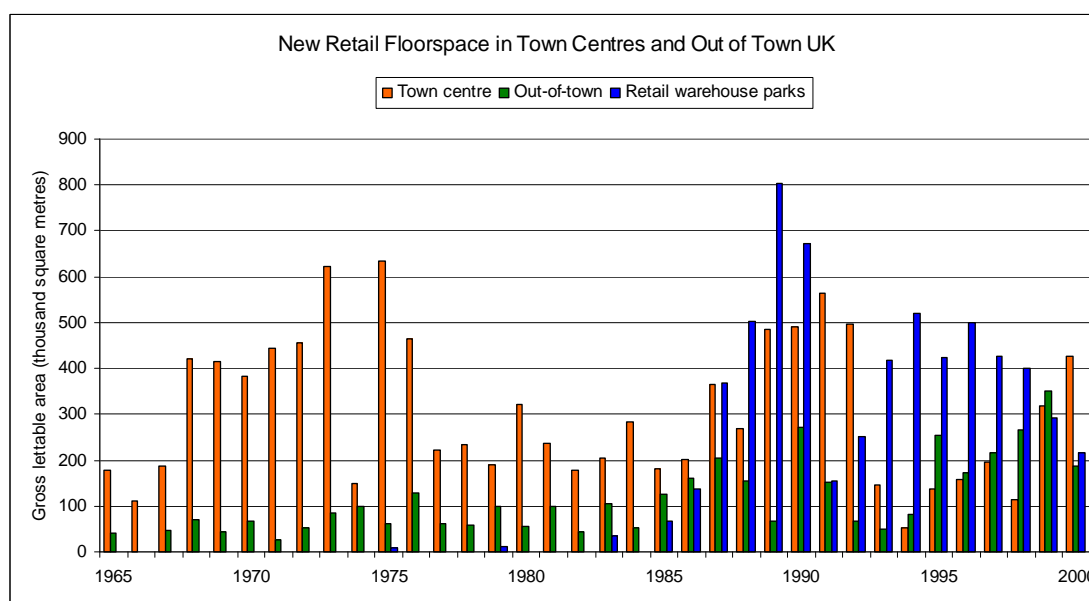


Chart 19. "New retail floorspace in town centres and out of town"  
(source: Ref. 1.30, page 13)

Expansion of the road network has allowed for the expansion of personal mobility. The average annual distance travelled per person has increased from 4,500 miles in 1972/73 (which is the first period for which this data is available from the National Travel Survey) to 7,100 in 2006 (see Chart 20). During this period, however, the average annual number of trips has increased only slightly from 956 to 1,037. As a consequence, the average trip length has increased from 4.7 miles to 6.9 miles. The faster speeds of travel that have been available have meant that the average time taken for a trip is the same in 2006 as in 1973/73 (22.2 minutes) and overall time taken travelling during the year has increased only marginally from 353 hours to 383 hours.

The increasing distances travelled per person is reflected in aggregate passenger travel growth (see Chart 21). Travel by car has taken an increasing proportion of this (see Charts 21 and 22). It should be noted, though, that growth in travel has slowed considerably since the 1980s

with evidence from the National Travel Survey that the annual distance travelled per person has stabilised since the end of the 1990s (see Chart 20).

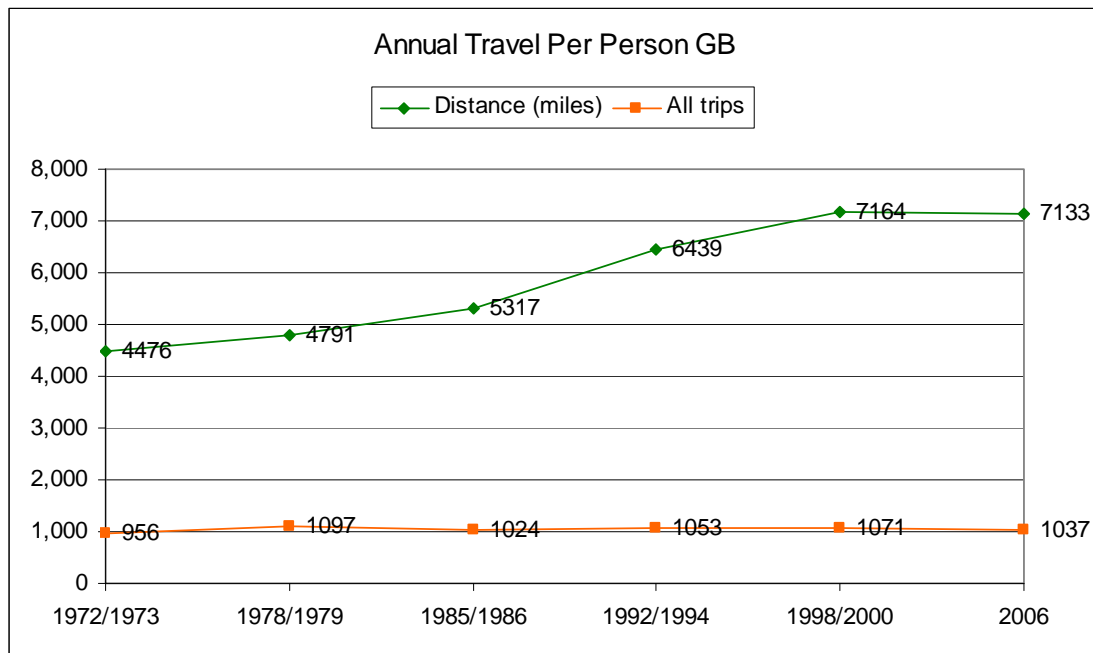


Chart 20. "Annual travel per person"  
(source: NTS series, specifically Ref. 1.31, Table 2.1)

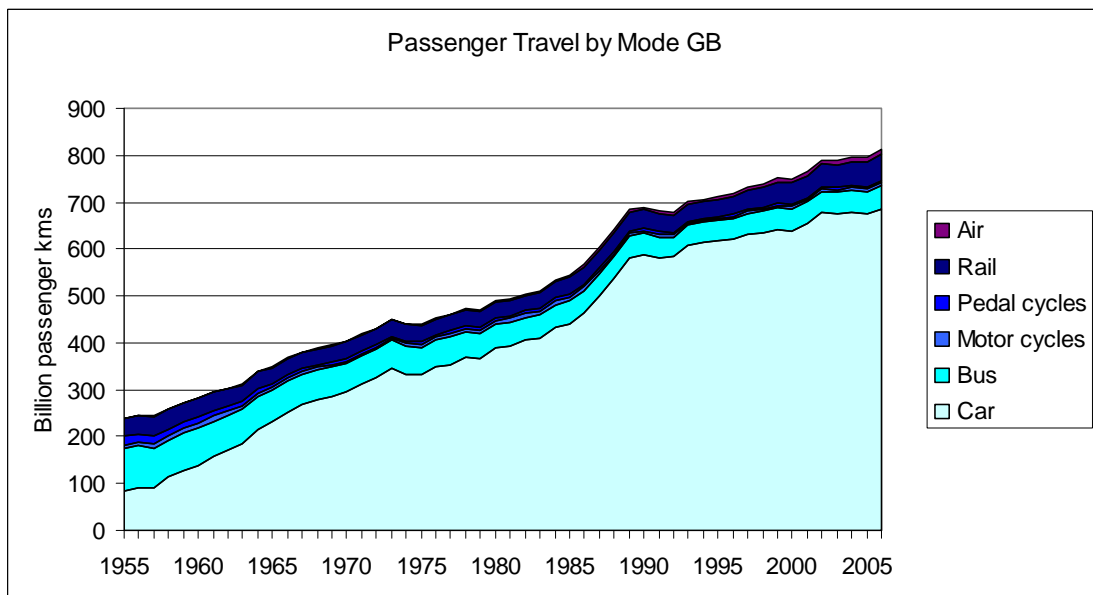


Chart 21. "Passenger travel by mode"  
(source: TSGB series, specifically Ref. 1.2, Table 1.1)

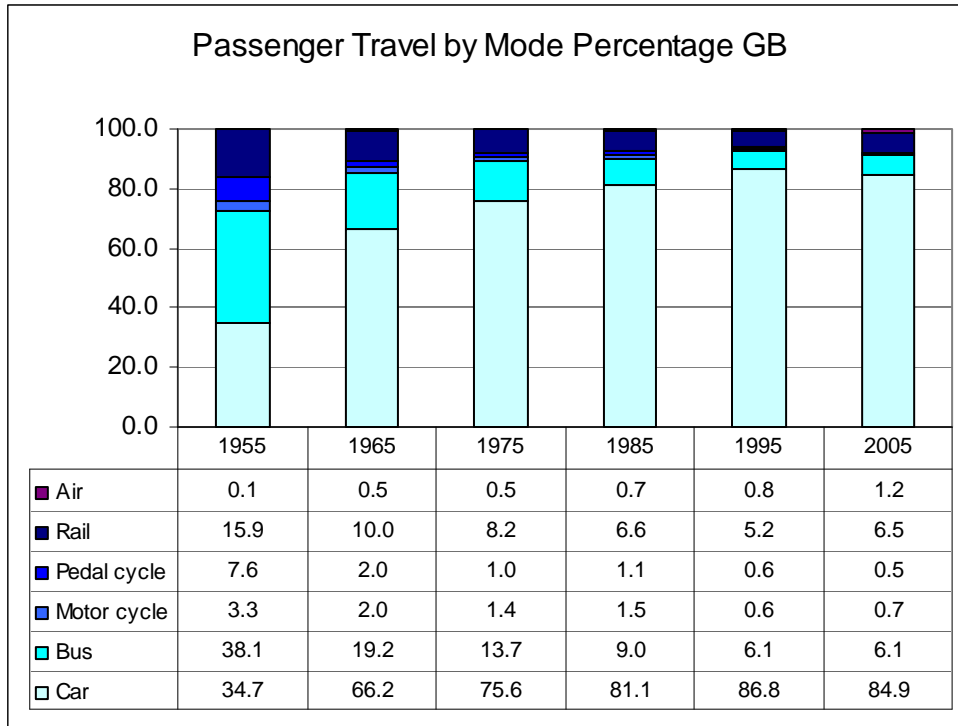


Chart 22. “Passenger travel by mode - percentages”  
(source: TSGB series, specifically Ref. 1.2, Table 1.1)

Congestion could be one determinant of the decreased rate of growth in travel. See Box 2 for a discussion of how congestion is measured and what information there is on past trends in congestion and current public perceptions of congestion. This provides evidence of worsening congestion on both inter-urban roads and urban roads. In 2004 the government abandoned the over-ambitious Ten Year Plan targets for reducing congestion. Nevertheless, in 2006 it announced two congestion related Public Service Agreement (PSA) targets. One PSA target was focused on making journey times more reliable on the strategic road network by 2007-08. Journeys will be considered to be more reliable if the average vehicle delay experienced on the 10 per cent slowest journeys is less in 2007-08 than during the baseline year 2004-05. The second PSA target states that, by 2010-11, the ten largest urban areas will meet the congestion targets set out in their Local Transport Plan relating to movement on main roads into city centres (Ref. 1.32, pages 11-13). As discussed in Box 2, the likelihood of meeting targets to reduce congestion appears to be low.

A survey comparing congestion in European countries in 1996 found that Britain had the worst congestion in Europe with one quarter of its most well used road links experiencing delays of one hour or more (Ref. 1.33). Although only proxy measures for congestion, the ratio of vehicle numbers to road length and distance travelled by motorised vehicle to road length give indications of the level of loading on the road network. These are shown in Charts 23 and 24 for all roads and for motorways. Over twice the traffic loading on motorways is apparent in 2006 compared to 1980.

Currently in 2008 we are witnessing very high prices of oil. In fact, petrol prices have increased substantially since 2003 (between 2003 and 2006 they increased by 21 per cent) and this may be contributing to the relatively slow growth of travel and traffic that has been observed in this period. Given the combination of high levels of congestion and high petrol prices that have been seen in recent years it can be suggested that there is much to be gained from policies focused on reducing car travel.

## Box 2. “Measuring congestion”

There are different perspectives on what represents congestion and how it can be measured which may explain why it is only relatively recently that attempts have been made to formally measure and monitor congestion and why it is therefore not possible to present long-term trend data in this paper. In 2006 the Government introduced Public Service Agreement (PSA) targets for congestion for the strategic (trunk) road network and for the ten largest urban areas (Ref. 1.32, pages 11-13). This has resulted in more formalised procedures being developed to measure congestion. These are discussed below along with evidence available on past trends in congestion. Public perceptions of congestion are presented after this.

A data collection programme is now in place to monitor congestion on the trunk road system based on average vehicle delay (minutes per 10 miles) on the slowest 10 per cent of journeys. This measures delay based on the difference between freeflow reference speed and actual speed. So far, this has shown an increase in congestion from 3.78 to 4.16 minutes per 10 miles between the baseline year (August 2004 – July 2005) and latest rolling year (September 2006 to August 2007) (Ref. 1.32, page 12). Between 1995 and 2003 congestion was measured in terms of average traffic speeds on the trunk road network and it was found speeds decreased substantially between 1995 and 1998 but recovered to some extent by 2003. There was during the eight year period an overall 2.5 mile/hour reduction in average speed on all trunk roads in the morning peak, 3.2 mile/hour reduction in the morning peak and 0.2 mile/hour reduction in the off-peak period.

Methods of measuring urban traffic congestion are currently being developed for use in setting and monitoring Public Service Agreement (PSA) targets. There is, however, data available for London from 1968 to the present day on average traffic speeds (Ref. 1.2, Table 7.12). For example, this shows that in the daytime off-peak period average speeds across Greater London have decreased from 21.3 miles/hour in 1968-70 to 18.3 miles/hour in 2003-06. In Central London average speeds in this period decreased from 12.1 miles/hour in 1968-70 to 9.0 miles/hour in 2000-03 before increasing to 10.5 miles/hour in 2003-06 after introduction of the congestion charge. There has also been a programme of traffic speed surveys since 1993 in the other 18 largest urban areas in England which shows average peak period speeds decreasing from 21.8 miles/hour in 1999/2000 to 20.9 miles/hour in 2006 and average off-peak period speeds decreasing from 26.3 miles/hour in 1999/2000 to 24.1 miles/hour in 2006 (Ref. 1.32, page 13).

Public perceptions of congestion are summarised in a recent report commissioned by DfT on public attitudes to transport (Ref. 1.34, page 62). 85-87 per cent of the public in ONS Omnibus surveys between 2005 and 2007 agreed with the statement that congestion was a serious problem for the country. 24-26 per cent of respondents say they experienced congestion on their most recent journey all or most of the time (Ref. 1.34, page 62). 77 per cent of respondents in 2006 and 2007 felt the level of congestion had increased in the last 2 years with 83 per cent believing congestion would worsen in the future (Ref. 1.34, pages 62-3). The British Social Attitudes Survey has asked questions since 1994 concerning how serious congestion is as a problem for respondents. The results have been stable for the period with one third of the population finding it serious on motorways and one half finding it serious in urban areas (Ref. 1.34, page 63). It is evident that while a very large majority of the public asserts the seriousness of congestion for the country, a large proportion of the population do not find congestion a serious problem for themselves. This distinction could be due to people becoming used to congestion and learning to accept it and adapt to it, while believing this is not possible for the country as a whole.

As regarding solutions to congestion, results from the British Social Attitudes Survey have shown that 33 per cent of the public were in favour of building more motorways to reduce traffic congestion in 2006 with the figure fluctuating between 25 per cent and 47 per cent in the years since 1991 (Ref. 1.34, page 68). Alternatively, in response to the statement “the current system of paying for road use should be changed so that the amount people pay relates more closely to how often, when and where they use the roads”, the ONS Omnibus survey between 2005 and 2007 found 53-55 per cent of the public agreed (Ref. 1.34, page 70). However, lower support was found for more specific road pricing propositions.

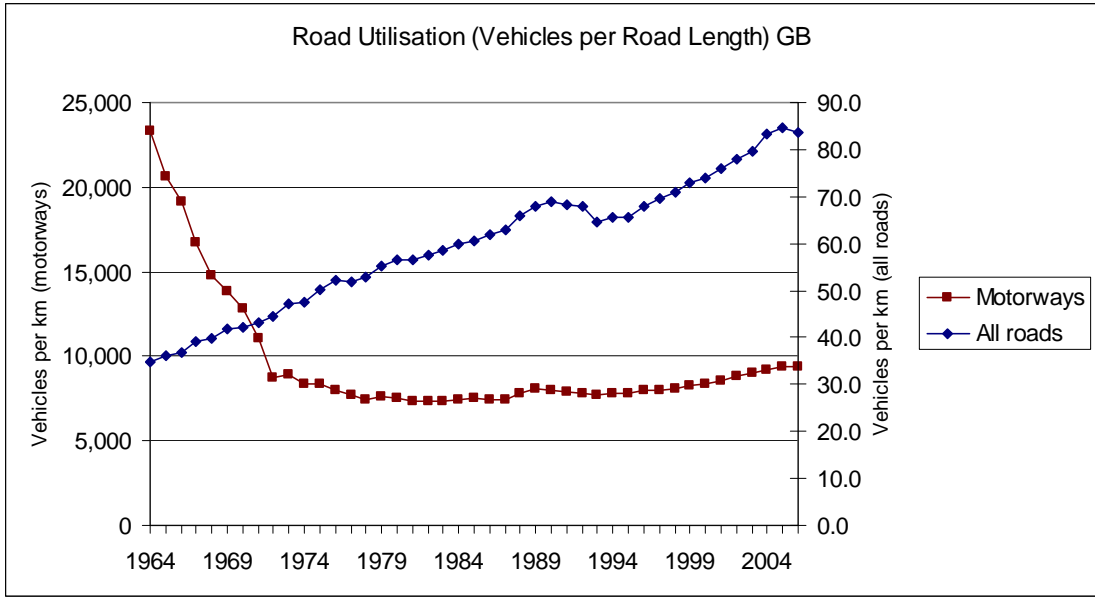


Chart 23. "Road utilisation based on registered vehicles"  
 (source: TSGB series, specifically Ref. 1.2, Tables 7.6 and 9.1)

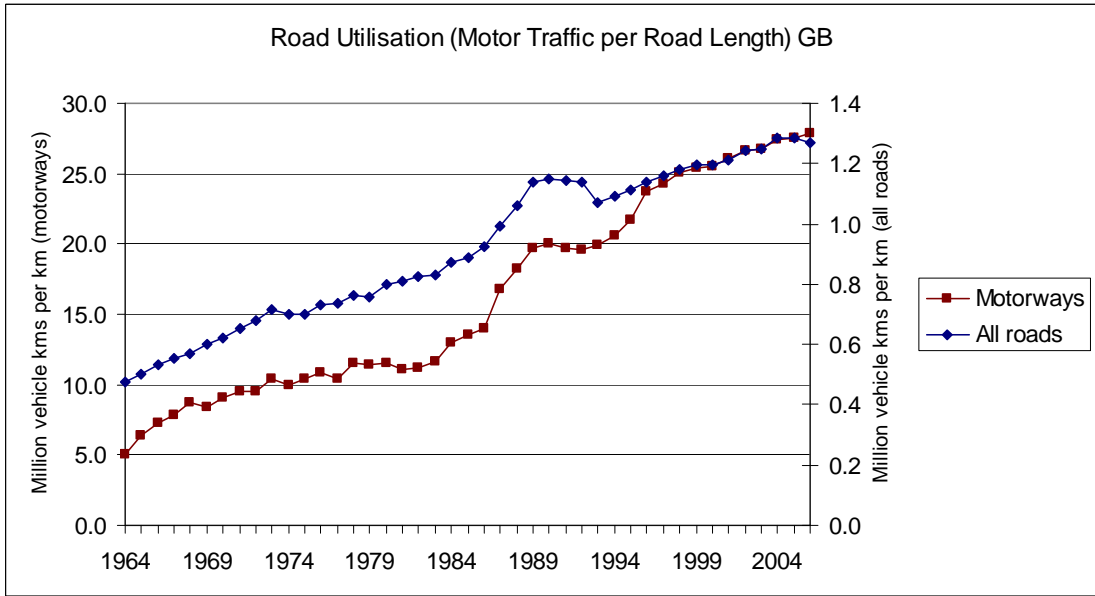


Chart 24. "Road utilisation based on motor traffic"  
 (source: TSGB series, including Ref. 1.2, Tables 7.1, 7.3 and 7.6)

## **2. The changing motor car market**

### **2.1 A social revolution**

To a large degree, it was the so called ‘Swinging Sixties’ that acted as a watershed between the old and modern worlds, and a major factor in the momentous social and economic changes of that decade was the new mobility experienced for the first time by millions of first time car drivers. There had been a significant growth in the numbers of registered cars in Britain during the 1950s (from 2.0 million in 1950 to 4.9 million in 1960), but this figure was dwarfed by the growth in the 1960s (from 4.9 million cars in 1960 to 10.0 million in 1970) (see Chart 1).

Whereas prior to the 1960s car ownership was basically restricted to a (mainly male) social and economic elite, the 1960s saw car use become available across gender, age and social groups. As motoring became a more classless activity, so cars became more diverse in size and design, and also came to reflect, or even symbolise, the changing times. Perhaps nothing became more synonymous with the ‘Swinging Sixties’ than the Mini, the compact, manoeuvrable, and stylish car that was equally popular with Royalty, nouveau riche pop stars, and young men and women owning their first vehicle.

The Mini was first released in 1959 by the British Motor Corporation, and was designed by Alec Issigonis. Being featured in popular films of the decade such as *The Italian Job* cemented the popularity of the Mini, and its position as an affordable status symbol. In fact, the car never made much money for its makers. Indeed, it is thought that due to an accounting error the car had been incorrectly priced originally, and each sale made a loss for the company. Although the 1960s was the heyday for the Mini, it remained in production until the year 2000, with a total sale of 5.3 million cars. When in 2000 BMW disposed of Rover, the parent group of the Mini, it kept the Mini brand name and began manufacturing a new car at the old Morris Cowley works in Oxford. The new Mini has a Brazilian-built Chrysler engine, and like the original has a transverse four-cylinder unit, driving the front wheels. The modern Mini has become a sales success in Europe and the USA, and in 2006 it stood at Number One in the list of UK produced models, on 184,687 (Ref. 1.35, page 34).

The enduring success of the Mini demonstrates how a car can survive over many years by establishing its niche market. Nevertheless, in terms of the mass UK market, the Mini is eclipsed by the inevitable appeal of the medium sized family car. Consequently, beneath the intense ‘Swinging Sixties’ focus on style and fashion, more significantly for the long term, the decade also saw the establishment of the mass sale family car. The great significance of this market is demonstrated by the quite remarkable fact that, since the mid 1960s, only *five* different models have been at Number One in the list of UK top ten registered models. These five are the: Austin 1100/1300 in 1965 and 1968-71; Ford Cortina in 1967 and 1972-81; Ford Escort in 1982-89 and 1992-95; Ford Fiesta in 1990-91 and 1996-98; and Ford Focus 1999-2006 (Ref. 1.35, page 7). The dominance of Ford models since the early 1970s demonstrates not only the success of the company in catering to this important market, but also perhaps a continuity and basic conservatism in the British public that reflects for many the perceived basic need for a car that can perform the basic routine tasks of the trip to work, the school run and the shopping trip.

The economics of the auto industry mean that there are two basic approaches to the business of making cars. One is to build at high volume for the mass market. The mass market business model was pioneered by Henry Ford, and as seen in the above list, the company he founded is still able to cater successfully for this market. The second approach is characterised by high-margin, lower production volume runs. The numbers sold are lower and the customers are buying heavily into premium brand values, while paying a premium for perceived added finesse, quality or performance in the final product.

## 2.2 Globalisation and car production

The fact that the Austin 1100/1300 was the most popular model in the mid to late 1960s, reflected the situation where UK owned vehicle manufacturing companies dominated the domestic market in that decade. In 1968, it appeared that this dominance was being consolidated when the British Leyland (BL) conglomerate came about through the merger of British Motor Holdings (BMH) and the Leyland Motor Corporation (LMC). BMH controlled Austin, Morris (including the Mini), Pressed Steel and Jaguar, while LMC not only manufactured trucks and buses but also owned Standard-Triumph and Rover. BMH was in difficulties and the merger was partly prompted by the government and the Industrial Reorganisation Corporation. At the time of the merger, BL held 77 per cent of the UK market, and produced 38 per cent of UK manufactured vehicles (Ref. 1.36, page 210).

In the event, the merger was not a success. BL cars acquired a poor reputation for quality and reliability, and as the list of best selling models demonstrates, the United States owned company Ford was becoming more popular with customers. As the 1970s progressed, so consumer choice widened, as imported models became much more prominent in the UK market. Between 1974 and 1984, the UK domestic market for new cars grew by 40 per cent to a total of 1.75 million units, but in the same period the number of vehicles produced in the UK fell by 625,000 units. In addition, UK car exports fell by 404,000 (68 per cent) over the same period. On the other hand, car imports share of the market increased from 28 per cent to over 58 per cent (Ref. 1.38, page 254).

Times became so hard for BL that in 1975 the company was acquired by the government in order to prevent it going into liquidation, and over the next decade huge sums of public money were pumped into the company to keep it afloat, amidst many labour disputes and confrontations. In 1975, the Austin Rover (the volume car manufacturer within BL) share of the UK market stood at 30 per cent, but by 1980 this figure had slumped to 18 per cent. In volume terms, the number of cars sold fell from 354,000 in 1975 to 267,000 in 1980. Public support for BL reached a peak in 1981 when the Conservative government provided BL with £990 million as the price for maintaining the volume car business (Ref. 1.37, page 121).

Despite its support for BL, the Conservative government led by Margaret Thatcher strongly supported free market values, and embarked on a huge programme of privatisation. As the fortunes of BL improved, the sale of the company took place in 1988 (becoming the Rover Group). Even more fundamentally, as the figures for vehicle imports showed, a globalised market was emerging, with a commensurate weakening in national identity.

Globalisation did not just entail a trade in vehicles. A growing trend was for component parts to be manufactured in one country and then shipped to another location for assembly. For example, Vauxhall, owned by the US company General Motors, produced cars from its UK factories. However, many of the component parts were manufactured on the continent of Europe, so that in the 1980s the UK content of Vauxhall cars stood at only around 46 per cent. Vauxhall defended itself here by claiming that the age of the 'Eurocar' had now arrived, with manufacturers making variations on a basic model, and then assembling these in various European countries to serve the whole market. In contrast, Ford in the UK had a more integrated operation, but many of its models popular with UK customers were manufactured at the company's sister plants in other European countries (Ref. 1.38, page 261).

The 1970s and 1980s also saw the major emergence of Japanese vehicles in the UK market. Initially, the increasing popularity of Japanese cars in the UK caused a backlash within the domestic industry, so that a 'Gentleman's agreement' was put in place whereby vehicle imports from Japan were restricted to around 11 per cent of the market. In the 1980s and 1990s, however, the Japanese set up factories in the UK, with Nissan, Honda and Toyota all

represented. In addition, Honda became a vital collaborative partner with Rover, to the extent that it was said Rover cars were really Hondas in disguise.

In recent years, the final demise of Rover in 2005 has had an impact on UK car production, but the arrival of the Japanese companies has ensured that the overall impact has been less than it might otherwise have been. Consequently, UK car production has declined from 1.71 million in 1997 to 1.44 million in 2006, but has remained relatively steady as a share of global car production at around 3.5 per cent. Nevertheless, the trend towards globalisation is reflected in the fact that the percentage sent for export over the same period has increased greatly from 57 per cent to 77 per cent (Ref. 1.35, page 30).

### **2.3 Car purchasing decisions**

Over the past two decades, the continued growth in the diversity of the range of cars available reflects both segmentation of the market and the role of the car as an expression of personal identity. As car ownership becomes more ubiquitous, so it ceases to be a status symbol in itself, and instead a premium is placed on size, style and the number of 'extras'. The proportion of households in Great Britain without access to a car fell sharply from 80 per cent in 1955 to 44 per cent in 1975 and has more slowly decreased to 25 per cent in 2005 (see Chart 25). At the same time, the proportion of households with two or more cars has increased from 11 per cent in 1975 to 31 per cent in 2005. Consequently, there are now more households with at least two cars than households with no car.

In Great Britain in 2005 there were 26.2 million registered cars and 32.9 million registered road vehicles in total (see Chart 1). 2.5 million new private cars and other light vehicles are registered each year (see Chart 26). As the number of registered cars has increased in the last ten years, the average annual mileage driven for each car has decreased from 9,590 miles in 1995/97 to 8,770 in 2006 (Ref. 1.2, Table 9.17). Cars are being used less intensively than in the past. Also, as cars have become more widely available, average vehicle occupancies (for all journey purposes) have decreased from 1.64 in 1985/86 (Ref. 1.39, Table 5.2) to 1.60 in 1995/97 and 1.58 in 2006 (Ref. 1.31, Table 6.2).

The number of cars per capita is lower than in Italy, Germany and France, similar to in USA and higher than in Spain, Netherlands and Japan (see Table 3). When accounting for other motorised vehicles the number of vehicles per capita is higher in all the other countries, except Netherlands, than in Great Britain. This reflects the large number of motorcycles in Italy and Japan and the very large number of two axle, four wheel vehicles recorded as goods vehicles, and not cars, in USA. In addition to the 32.9 million registered motor vehicles in Great Britain there are estimated to be about 1.75 million unregistered vehicles (Ref. 1.40, page 176).

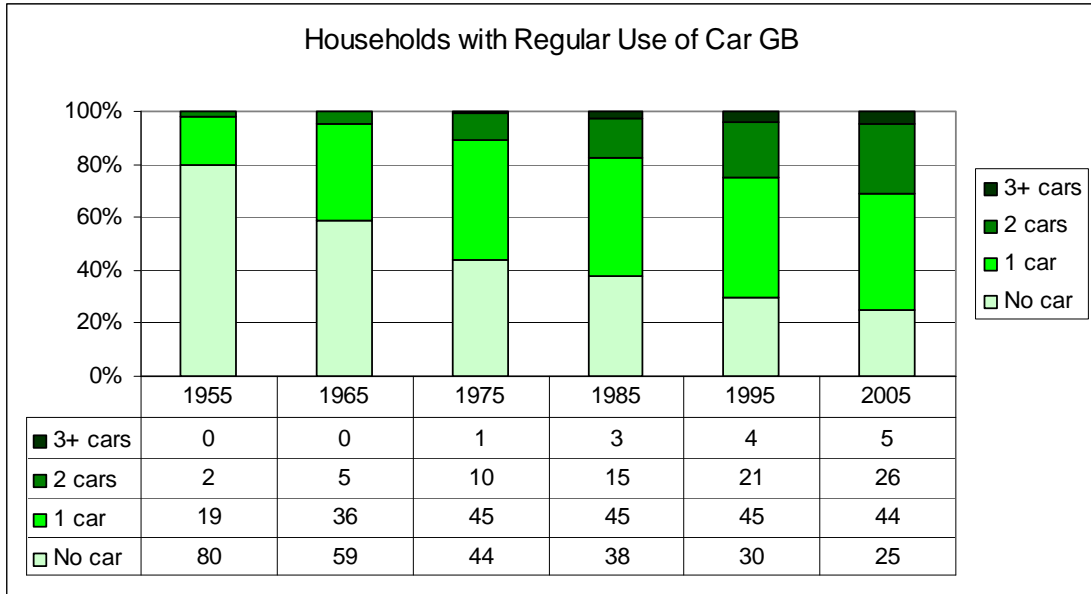


Chart 25. “Households with regular use of a car”  
(source: TSGB series, specifically Ref. 1.2, Table 9.14)

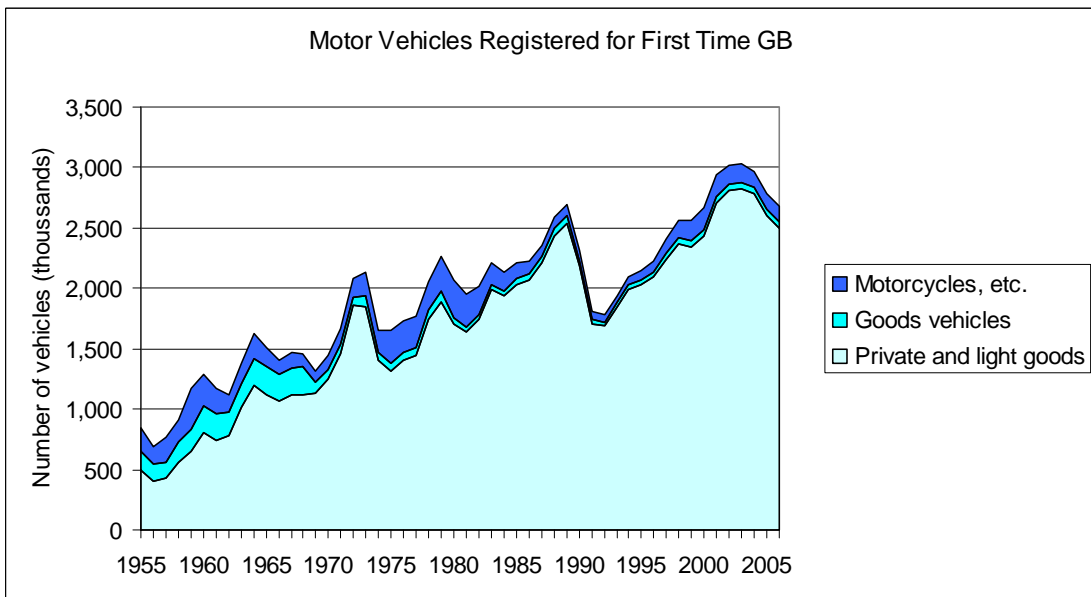


Chart 26. “Motor vehicles registered for first time”  
(source: TSGB series, specifically Ref. 1.2, Table 9.2)

Table 3. “International comparison of registered vehicles per capita 2005”  
 (source: Ref. 1.2, Tables 10.1 and 10.3)

Country	Cars and taxis licensed per thousand persons	Road vehicles licensed per thousand persons
Great Britain	470	551
France	500	642
Germany	559	661
Italy	590	820
Netherlands	434	530
Spain	463	612
Japan	432	686
USA	460	820

A trend that has been apparent since the 1980s is the increasing popularity of larger vehicles. This is exemplified particularly by the growth of the 4x4 market. In 2006, 7.5 per cent of new car registrations were 4x4s/SUVs, compared with just 3.8 per cent in 1997 (Ref. 1.35, page 11). Also multi-purpose vehicle registrations increased from 2.0 per cent of the market to 5.3 per cent in the same period. More broadly, 36 per cent of registered cars (9.6 million vehicles) were above 1800cc in 2006, whereas the figure had been 18 per cent (2.6 million vehicles) in 1980 (see Chart 27).

At the same time, the past decade has, ironically, also seen a greater public awareness of fuel economy and the environmental impact of the car. This is reflected particularly in the increase in diesel-powered cars, which are considered not only more fuel efficient than petrol cars, but also less polluting. Consequently, new car registrations of diesel cars increased from 351,000 in 1997 to 899,000 in 2006 where they make up 40 per cent of the new car market. The most popular diesel car in the UK in 2006 (as in the total market) was the Ford Focus, with 49,000 vehicles sold (Ref. 1.35, page 9).

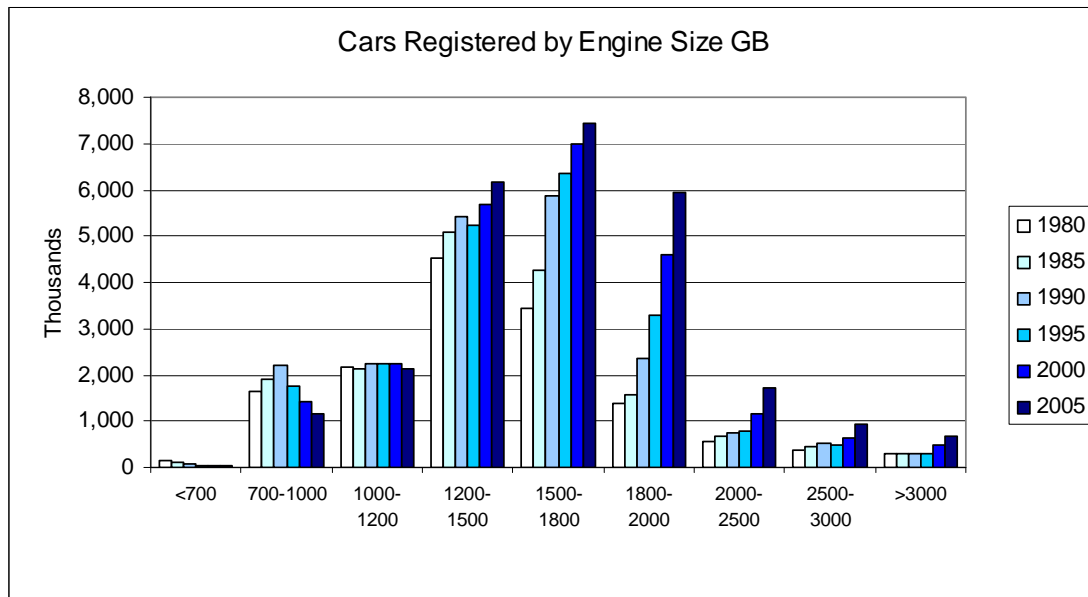


Chart 27. “Cars registered at end of year by engine size”  
 (source: TSGB series, including Ref. 1.2, Table 9.3)

Attempts to produce less polluting vehicles has produced cars powered by such fuels as liquefied petroleum gas (LPG), compressed natural gas (CNG) and liquid natural gas (LNG). In 2003, it was estimated that there were around 100,000 vehicles running on LPG in the UK, with around 850 on CNG and LNG. One problem for people owning these vehicles is to be able to refuel them. Thus in 2003 it was also estimated that there were around 1,300 LPG, 19 CNG and 7 LNG refuelling sites in the UK (Ref. 1.40, 185-6).

More recently, concerns about the role of the chief 'greenhouse' gas carbon dioxide in global warming has produced relatively low carbon emission cars such as the Toyota Prius. There are echoes of the Mini in the 1960s in that the Prius has become something of a status symbol with those anxious to demonstrate their environmental credentials, and famous customers include the Prince of Wales, Tom Cruise, and Madonna. Further significant links with the Mini are that the Prius does not make a profit for Toyota. The company decided some time ago to be a leader in petrol-hybrid technology, realising that it would be a long-term investment, and that the benefits could flow across model lines and brands. The investment in the Prius can therefore be seen as the price Toyota is prepared to pay in order to remain at the forefront of technological development. Intriguingly in this context, in 2008 the fellow Japanese company Honda produced the Clarity, the first commercially available hydrogen fuel cell car.

A recent study of the role of environmental concerns in car purchasing decisions asked a representative sample of drivers to identify from a list of factors the five most important in their latest car purchase decision (Ref. 1.41). 'Impact on environment' ranked thirteenth overall and was identified by only 11 per cent of respondents. 'Reliability' and 'price' were ranked first and second with 58 per cent and 55 per cent of respondents, respectively, identifying them. 'Fuel efficiency' was ranked third and was identified by 46 per cent of respondents. 'Make of car' (46 per cent), 'comfort' (41 per cent), engine size (30 per cent) and safety features (21 per cent) were next most important. However, noting that environmental impacts are strongly linked to fuel efficiency the survey findings suggest that car purchasing decisions of almost half of motorists are indirectly aligned with environmental protection.

#### **2.4 Variations in household car availability**

While the total numbers of cars in the UK has increased steadily but inexorably over the past fifty years, the overall trend masks some significant geographical differences. Urban areas have better access to public transport services and jobs and amenities and it can be expected that it is easier for people to manage without a car. This is borne out by the statistics. In London in 2006, 38 per cent of households did not have access to a car compared with 31 per cent in Metropolitan built-up areas and only 11 per cent in rural areas. In rural areas half of households had access to two or more cars, compared with only 16 per cent in London (see Chart 28).

Household car availability is also related to income with 51 per cent of the lowest income quintile households having no access to a car and only 9 per cent of the highest quintile households having no access to a car. While only 34 per cent of the lowest income quintile households had access to a car in 1995/97 (Ref. 1.32, page 52), this had increased to 49 per cent in 2006 (see Chart 29).

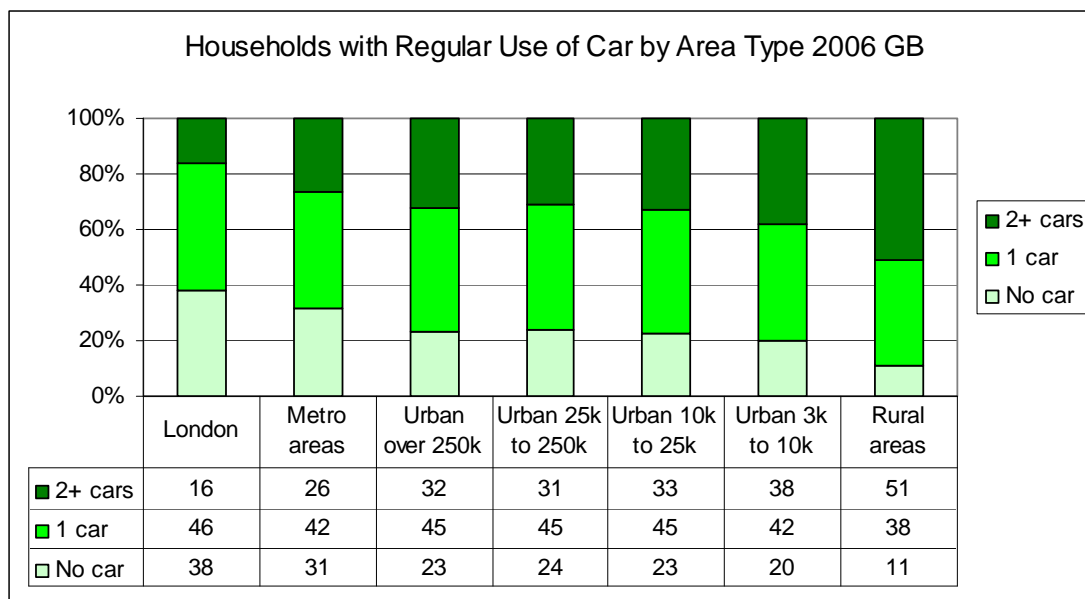


Chart 28. “Households with regular use of a car by area type 2006”  
(source: Ref. 1.2, Table 9.15)

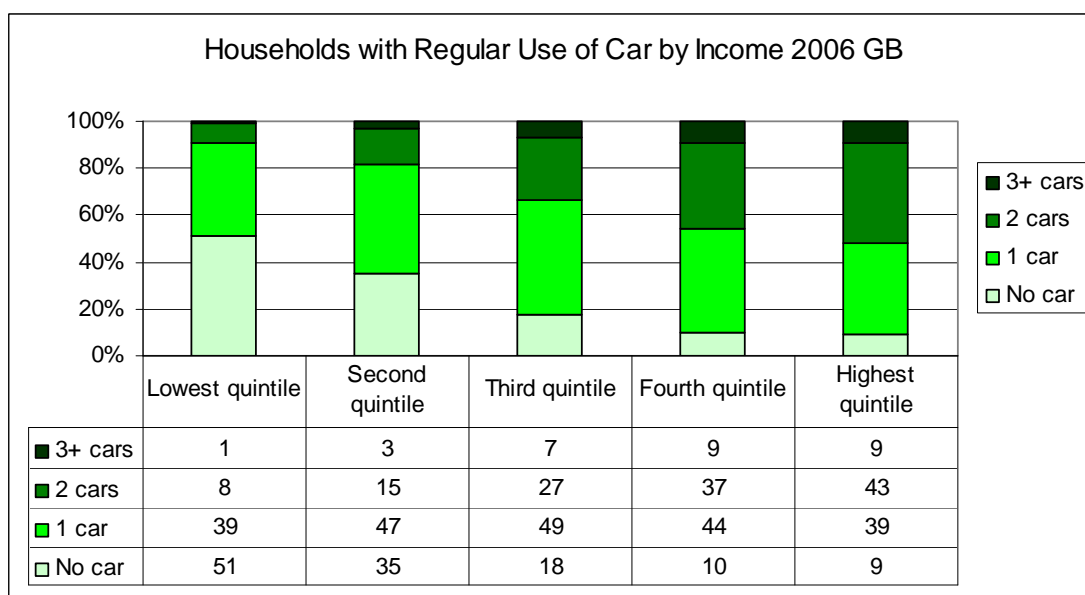


Chart 29. “Households with regular use of a car by income 2006”  
(source: Ref. 1.31, Table 5.3a)

Overall vehicle totals can also mask significant shifts in numbers of drivers by age and gender (see Charts 30 and 31). Thus since 1995/97 the proportion of men holding a full car driving licence has remained unchanged at 81 per cent, while the proportion of women with a licence has increased from 57 to 63 per cent. On the other hand, the proportion of young driving licence holders has decreased since the early 1990s, so that 34 per cent of those aged 17-20 held a licence in 2006 compared with 43 per cent in 1995-97. The explanation for the fall has been attributed to the growth of higher education, increased motoring costs, improved public transport, police targeting of young drivers and the introduction in 1996 of a theory component of the driving test.

In contrast to the trend for young people, there has been a large increase in the numbers of older women holding a driving licence. Between 1995/97 and 2006, the proportion of women aged 60-69 holding a licence increased from 45 to 63 per cent. Over the same period, the

proportion of women aged 70 or over holding licences increased from 21 to 31 per cent (Ref. 1.31, page 11). The trend for an increasing proportion of older people to hold a driving licence, coupled with the projected future absolute increase in the number of older people in the UK population, will mean that this group will need to be given much greater consideration in transport planning than in the past.

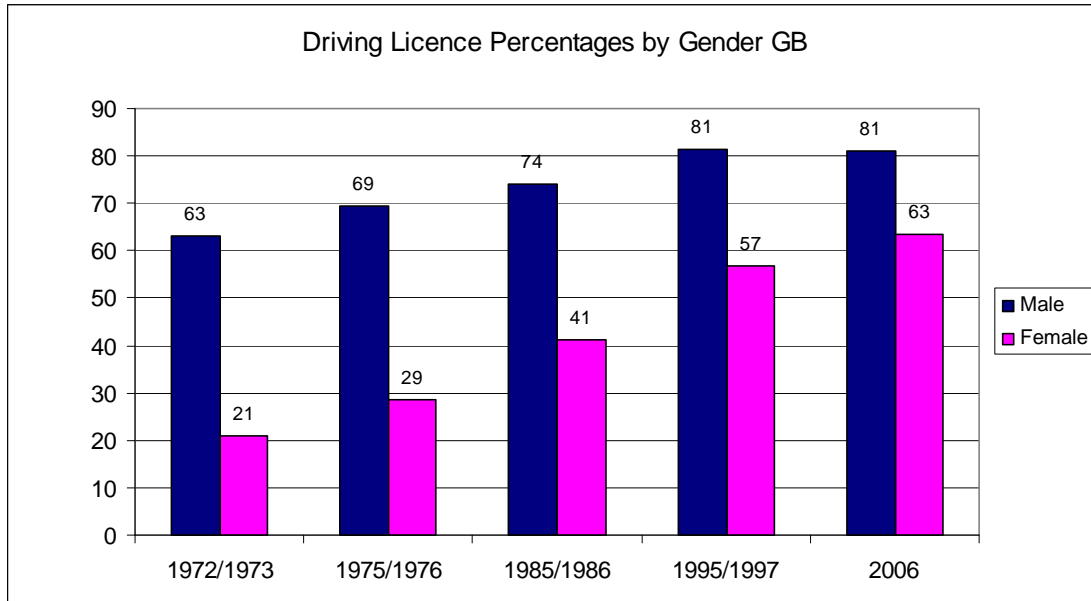


Chart 30. "Driving licences by gender"  
(source: TSGB series, including Ref. 1.2, Table 9.16)

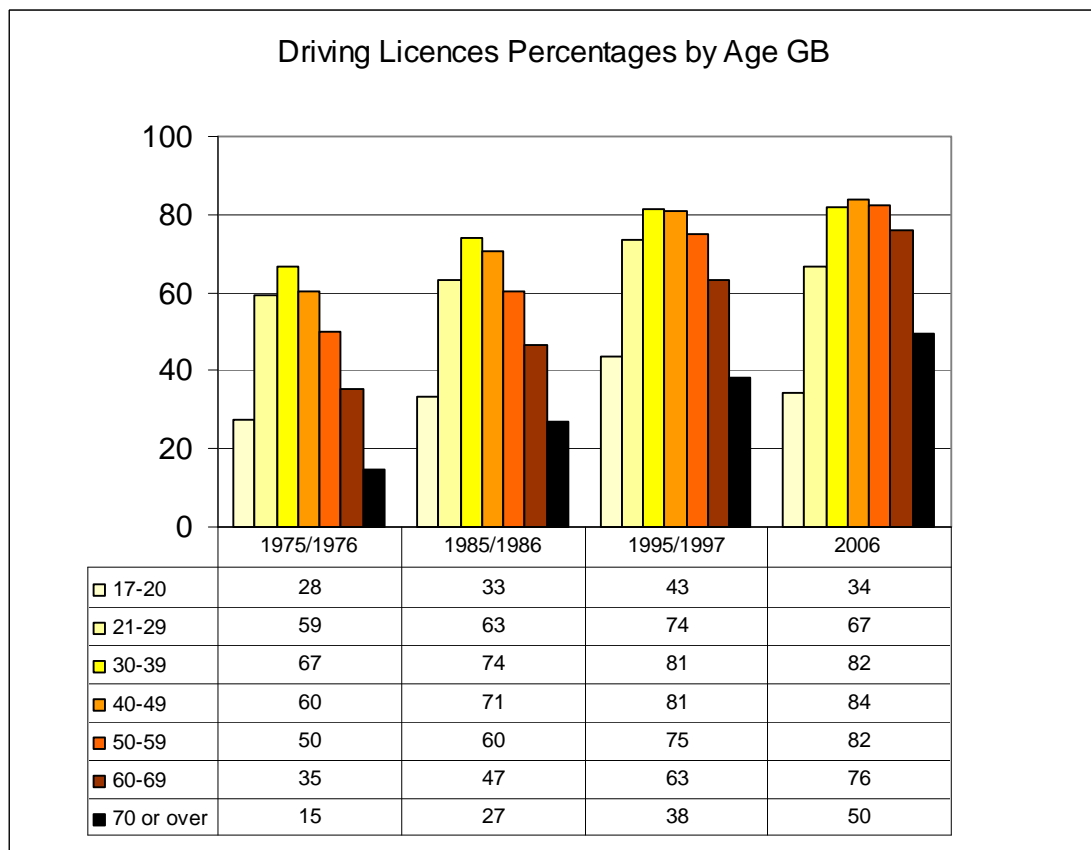


Chart 31. "Driving licences by age"  
(source: TSGB series, including Ref. 1.2, Table 9.16)

### **3. The fall and rise of rail**

#### **3.1 Revolution and decline**

The rapid development of the railways in the Nineteenth Century represented a period of revolutionary economic and social change and its role in shaping society may have been as significant as that of the car in the Twentieth Century. Not only did the railways usher in a modern age that for the first time made true mobility and accessibility for the great mass of the people a practical proposition, the railway companies themselves became powerful economic forces that promised large profits for investors. The rapid development of the railways produced a boom in Parliamentary Acts authorising the building of lines, but also provoked a reaction by government to place some sort of control on these companies that threatened to exert monopoly power. Consequently, the government attempted to exert control particularly through limiting the system of charging, so that by 1914 it could be said that the railways were the most regulated form of economic activity in Britain (Ref. 1.42, page 163).

Ironically, however, even by the 1920s, it had become clear that the railway companies were in a depressed state. The government had taken control of the companies during the First World War, and was empowered to retain this control for two years after it. Nationalisation seemed the most likely option, but in the event the government imposed a rationalisation into four companies based on the regional main lines. Prices were still controlled by a Railway Rates Tribunal, and during the inter war years the companies remained in a largely depressed state. By now, competition from motor vehicles was intensifying, and road haulage and coach operators would be much more flexible in their pricing.

After the Second World War, there was a general acceptance that the old structure was beyond repair, and so nationalisation of the railways was swept up in the *1947 Transport Act*. The railways formed one of five executives within the giant British Transport Commission (BTC), but the unwieldy BTC was not a success, and eventually the country was split into six Area Boards for the railways (Ref. 1.3, pages 34-6).

By the mid 1950s the BTC was sure that the railways were falling well behind other European countries in the development of diesel and electric services and the continued reliance on steam. As a result, a modernisation plan was published in 1955 that envisaged an expenditure of £1,240 million over fifteen years. Unfortunately, this well intentioned plan hit a large number of obstacles, and by the late 1950s the railways continued to struggle. In this respect, it was not just competition from the roads which threatened the railways. Thus Reid and Allen note that in 1956 the railways were carrying 168 million tonnes of coal and coke, but only 122 million tonnes in 1967, and that the greater part of this reduction was a result of the diminished size of the coal industry rather than competition from alternative transport modes (Ref. 1.43, page 110).

Gourvish calculates that the British Railways (BR) deficit had risen, at constant 1948 prices, from £1.7m in 1953 to £77.5m in 1960 (Ref. 1.44, page 596). However, this deterioration in finances happened despite the fact that passenger numbers remained relatively stable (see Chart 32). For example, in 1954 there were 1,020 million passenger journeys and by 1960 this figure had risen slightly to 1,037 million. Similarly, passenger kilometres rose from 33,333 million in 1954 to 34,676 million in 1960. The perceived problem, however, was that too many of the passengers were concentrated on too few of the lines.

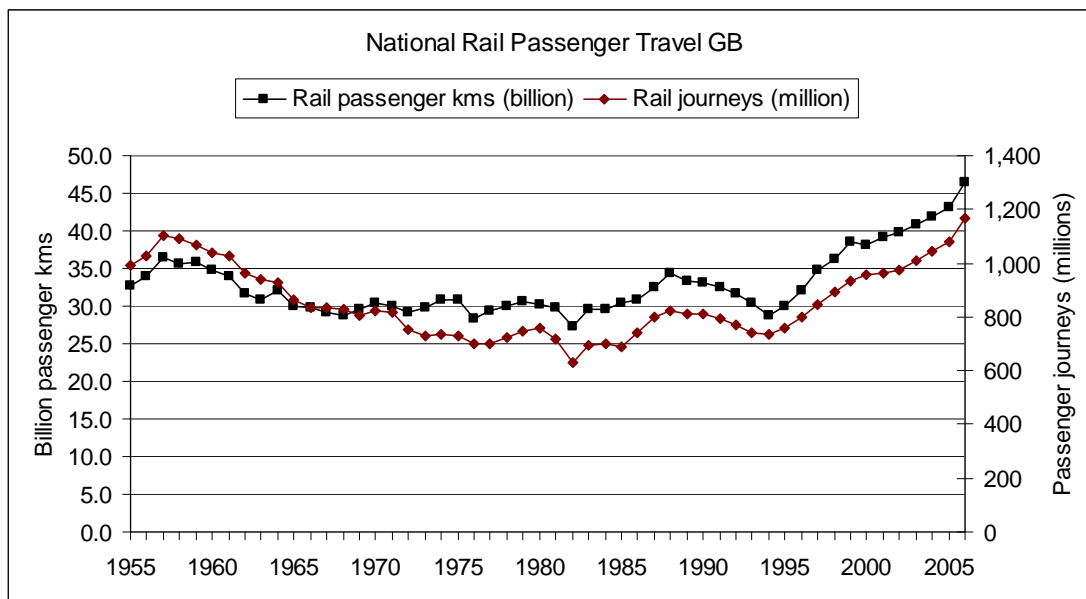


Chart 32. “National rail passenger travel”  
(source: TSGB series, specifically Ref. 1.2, Table 6.1)

### 3.2 The Beeching watershed

By the early 1960s there was a strong political will to consider radical solutions to deal with the rail problem. The answer arrived in the form of the BR Chairman Dr Richard Beeching, who envisaged the concept of a commercial railway. In his now legendary 1963 Report *The Reshaping of British Railways* Beeching set out in stark fashion the stations and lines that were not profitable, and therefore expendable (Ref. 1.45). Beeching concluded that we should expect the provision of railways to be limited to routes over which it is possible to develop dense flows of traffic, with trainload quantities, and which benefit from the speed and reliability which the railways are capable of achieving. Consequently, the Report was concerned entirely with showing, as quantifiably as possible, how far the existing system departed from this condition, and to decide what changes were necessary to put matters right. From these, he produced the apparently damning statistic that one-third of the route mileage carried only 1 per cent of total passenger miles, and 1 per cent of the freight tonne miles of BR. Similarly, one-third of stations produced less than 1 per cent of total passenger receipts and half of the stations produced only 2 per cent.

Beeching recommended the closure of 2,000 stations in England, Scotland and Wales, while on the freight side he recommended that the over 900 stations and depots should be reduced in number, and BR should concentrate more on inter-city flows. He concluded that, if his whole plan was implemented with vigour, then much (but not necessarily all) of BR’s deficit should be eliminated by 1970.

Beeching’s conclusions have been subjected to a large amount of critical analysis over the years (e.g. Ref. 1.36, Ref. 1.46), but in the 1960s his recommendations were basically accepted by successive governments, and much of his plan implemented (see Chart 33). For example, Gourvish calculates that Ernest Marples, the Minister of Transport 1959-64, accepted or part-accepted 141 closure proposals, and rejected seven, between June 1963 and October 1964, when he left office. During this period, 1,436 miles of track were closed, with an estimated saving of £5.3m. However, under Marples’ Labour successor, Tom Fraser, 819 miles of track were closed between October 1964 and December 1965 (Ref. 1.44). By 1967, some 72 per cent of stations specified for closure by Beeching had closed, and 84 per cent of passenger services identified were withdrawn (Ref. 1.47, page 34).

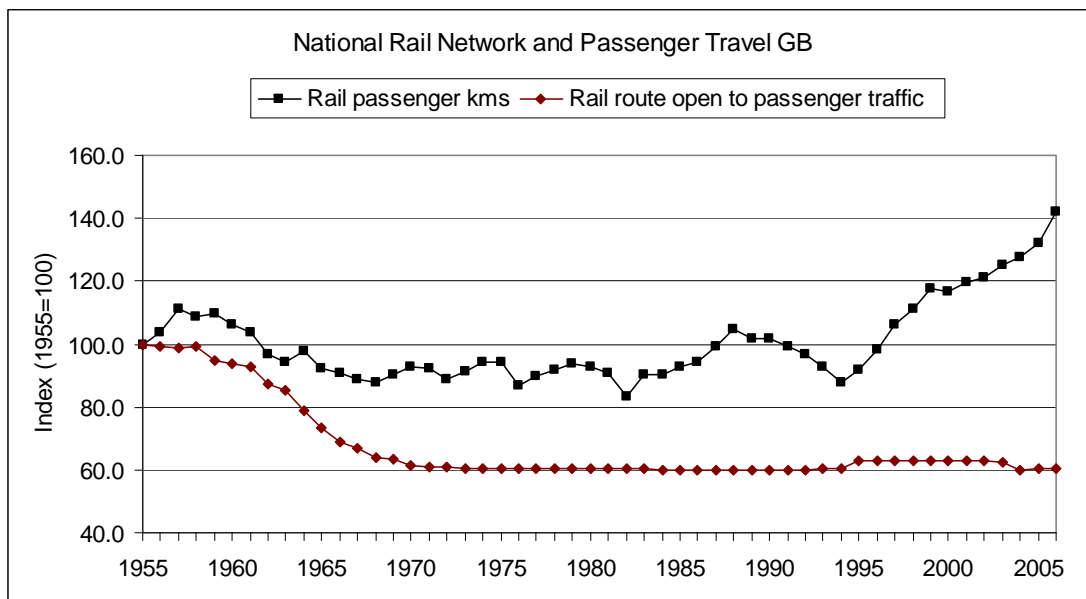


Chart 33. “National rail network and passenger travel”  
 (source: TSGB series, specifically Ref. 1.2, Table 6.1)  
 (Note: changes made in methods of measuring rail network in 1995/96 and 2004/05)

Nevertheless, from the late 1960s the Labour government agreed to subsidise from public funds un-remunerative rail services in both urban and rural areas which were considered to be socially necessary. As Thomson and Hunter comment, the services covered went well beyond those identified in *The Reshaping of British Railways*, amounting to virtually the whole passenger network outside the inter-city services, and not a few of the latter were also included. When combined with increased revenue, in 1969 BR reported an overall surplus for the first time since 1952 (Ref. 1.48, page 139).

### 3.3 Stemming the tide of decline

Regardless of the commercial merits of the Beeching solution, the effect of the radical 1960s closures was inevitably to put the industry further on the defensive. In 1950 BR employed 606,000 staff, with a total network covering 19,471 track miles and 8,487 stations. By 1967 staff numbers had almost halved to 318,000, track miles had declined by almost a third to 13,172, while the number of stations had almost halved. By 1976, staff numbers had declined to 244,000, route miles to 11,189 and stations to 2,865. In terms of relative shares in the travel market between 1956 and 1967, rail percentage share of total land passenger mileage had fallen from 18.3 to 9.5, and its share of the freight market as measured in tonne miles had fallen from 39.2 per cent to 18.4 per cent (Ref. 1.49, page 113).

The oil crisis of the early 1970s highlighted the travel and environmental assets of rail, and in this more benign economic and political climate the *1974 Railways Act* moved towards a block grant structure for socially necessary passenger services, wrote off £250m of accumulated debt, and introduced the provision of facilities for freight haulage by rail (Ref. 1.50, page 26). Under the new system of Public Service Obligation, grants could be made for un-remunerative passenger services to provide a service comparable to that in 1974. In this more sympathetic climate, the 1977 Transport White Paper on transport policy confirmed the continuation of a high level of revenue support and promised no major cuts in the rail network (Ref. 1.47, pages 35-6). Nevertheless, the degree of subsidy required is illustrated by the total revenue support in 1975 of some £500m, compared with the turnover of £1269m, a subsidy of almost 40 per cent (Ref. 1.49, page 119).

Nevertheless, the 1960s and 1970s did at least see some of the major investments set out in the 1955 modernisation plan finally implemented. In particular, electrification of the line from London to Glasgow cut the journey time substantially. Thus in 1955 the fastest journey time from London to Glasgow was 7 hours 15 minutes, but by 1976 this time had been reduced to 5 hours. However, these major investments failed to halt a drastic fall in passenger journeys from 1,037 million in 1960 to 702 million in 1976 (Ref 1.2, Table 6.1). With the large increase in payments of Public Service Obligation, Beeching's vision of a commercial railway was unfulfilled, and it could be said that the large scale closures of the 1960s had accelerated public and government perceptions of rail as an industry in irreversible decline.

### **3.4 Crisis and privatisation**

The negative image of rail was strengthened in the 1980s by a Conservative government that strongly favoured investment in roads. Prime Minister Margaret Thatcher referred to 'the great car economy' while rail was thought of as over manned and inefficient. In fact, the number of staff employed by BR fell by over 20 per cent between 1974 and 1983, from 199,437 to 155,423, but between 1975 and 1982 the deficit on railway operations rose from £692m to £1,035m (Ref. 1.50, pages 33-5).

The government had generally become sceptical about the operation of the rail industry and in 1982 appointed Sir David Serpell to chair a study of Railway Finances. The 1983 Serpell Report carried several echoes of the Beeching Plan two decades earlier. Serpell published five network mileage options in order to assess whether significant economic improvements might arise from a smaller network. These options included a rump of 1,630 route miles from a 1983 base of 10,541 miles (Ref. 1.50, page 36).

This basic option attracted a great deal of public alarm and criticism, and the government shied away from the political costs of implementing such a radical plan. In 1982 BR itself reorganised its passenger services into three distinct groups: InterCity; Network SouthEast, and Provincial. In the event, as the 1980s progressed, BR's finances improved, and by 1988 InterCity services had achieved profitability, and Network SouthEast passenger levels had grown by 15 per cent in three years. Ironically, overcrowding became an issue, and BR attempted to ration by price through raising fares for five consecutive years at more than the rate of inflation. In addition, countering the Beeching era, new stations were opening at the rate of about 15 a year. At the same time, the separating out of the Provincial services threw into greater relief many of the loss making local inter-urban and rural services (Ref. 1.46, pages 223-4).

As the 1980s progressed, the government greatly accelerated the programme of privatising publicly owned assets. As is seen in the section on buses, this included the sale of the National Bus Company (NBC). Rail was another matter, however, and here Ministers were extremely wary of what they saw as the financial and political risks, despite the industry's improving financial position. It was only in 1992 that the government announced its intention to privatise British Rail, and a crucial decision here was to separate the track authority, Railtrack, from the train operating companies (Ref. 1.51). The core of the privatisation process, apart from the sale of Railtrack, was the phased franchising of the 25 train operating companies. The first two franchises were let in early 1996, and by March 1997 all 25 had been transferred to the private sector. Significantly, several of the successful bidders were owners of former NBC subsidiaries, such as Stagecoach, National Express and First Group. Railtrack began trading in 1994, and its 1996 flotation yielded £1.95 billion.

In the event, the massive and unwieldy Railtrack proved to be a ticking time bomb for both the industry and the government. One problem was that the incentive structure of rail privatisation had serious defects. Thus the train operators could only add 'slots' if Railtrack found network slots for them. However, although Railtrack had a regulatory duty to meet the

train operator's needs, it had no financial incentive to do so. This was because 97 per cent of its track access income was fixed, regardless of the number of trains. Hence, there was a large 'black hole' with regard to who would actually pay for desperately needed rail investment (Ref. 1.3, page 227).

Railtrack also adopted a policy of contracting out much of its essential maintenance work, but failed to keep sufficient checks on the jobs that were actually being done on the ground. The consequences of this were appallingly apparent in October 2000, when a broken rail at Hatfield caused a King's Cross to Leeds express to derail at 115 mph, killing four people. In the wake of the Hatfield crash, Railtrack was compelled to check all lines for cracks, virtually bringing the whole network to a standstill for months, and costing the train operators many millions of pounds in lost revenue. Thus there was a very clear drop in performance in 2001 following the Hatfield accident, especially in the long distance sector, where the moving annual average performance (performance of trains against timetable) fell from over 80 per cent in the Summer before the accident to almost 60 per cent by the end of 2001 (Ref. 1.40, page 191).

Public concern about the events post-Hatfield was also heightened by the fact that public subsidies to the rail industry had actually risen since privatisation, standing at £1.348 billion in 1999-2000, compared with £1.073 billion in 1993-94, the last year of public ownership (see Chart 9). For Railtrack the Hatfield crisis proved to be the beginning of the end, and in 2003 it went into liquidation to be replaced by a more public controlled Network Rail. Nevertheless, the fragmentation of the rail industry through privatisation, and its impact on operational and financial efficiency, continues to be a highly contentious topic.

### **3.5 A phoenix rising**

For over forty years the rail industry was seen as being in a state of managed decline. In contrast, and very much against expectations, the past decade has seen a large increase in rail use (see Chart 32). Consequently, the distance passengers travelled on the rail network had been reasonably constant at between 28 and 33 billion kilometres in the thirty years to the mid 1990s. In the late 1990s, however, there was a decisive break, with passenger kilometres rising sharply to 40 billion in 2003-04 (see Chart 34). The bulk of this rise occurred in the London and South East region, boosted by commuters, which account for half of passenger kilometres in the country. As a result of fare increases and the rise in journeys, passenger revenues increased sharply to nearly £4 billion in 2003-04, a rise of over 50 per cent since 1996-97 (Ref. 1.40, page 191).

In 2006-07, the number of journeys made on national rail was 1,164 million, the highest recorded figure since 1946. One of the most remarkable features of the recent rise in the number of passengers is that it has taken place while motoring costs have remained relatively constant in real terms and rail fares have risen above the Retail Price Index (see Chart 35). Also low air fares have led to strong competition for rail on some inter-city routes with domestic air passenger kilometres travelled increasing strongly from 5.9 billion in 1995 to 9.9 billion in 2005 (rail passenger kilometres have increased from 36.8 billion to 51.8 billion in same period) (see Chart 34).

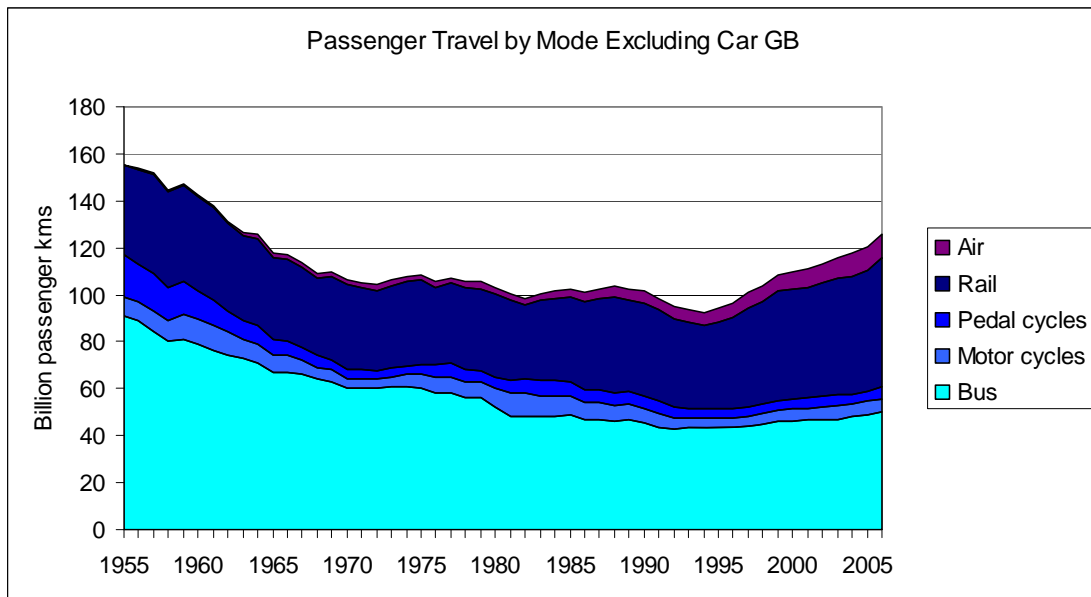


Chart 34. "Passenger travel by mode excluding car"  
(source: TSGB series, specifically Ref. 1.2, Table 1.1)

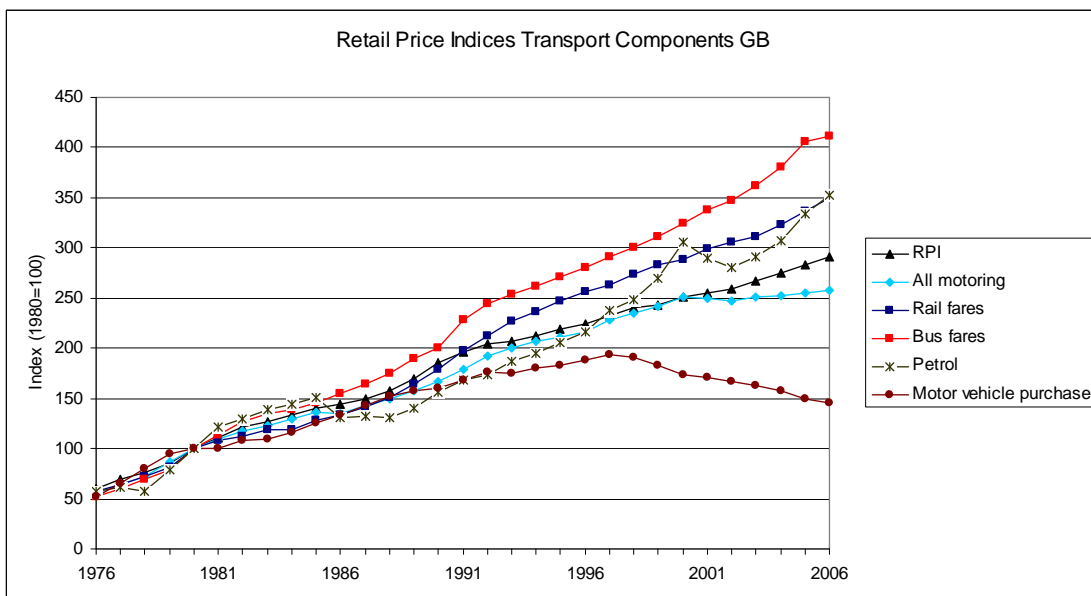


Chart 35. "Retail price indices transport components"  
(source: TSGB series, including Ref. 1.2, Table 1.19)

The National Passenger Survey indicates that satisfaction levels have increased between 2001 and 2007 for the journey being undertaken on the day of the survey (from 69 per cent to 79 per cent) and for the general categories of punctuality and reliability, frequency of trains and information. However, satisfaction with value for money has remained low at about 40 per cent (Ref. 1.32, page 47).

The outcome for rail freight is similar to rail passengers (see Chart 15). Thus the amount of freight carried on the railways decreased steadily from 1988 to a low point in 1994. It has then increased steadily. The trend is largely driven by the transportation of coal. This commodity accounts for one quarter of the tonne kilometres of freight moved, but nearly half of the freight tonnes lifted (Ref. 1.40, page 192).

Nevertheless, given the continuing leap in the number of rail passengers, the country now has to learn how to adjust to the problems of success rather than the management of decline. One urgent problem is that of overcrowding, particularly on heavily used commuter lines, and the industry has found difficulty in coping here. For example, in 2003-04 passenger kilometres rose by 3 per cent and passenger journeys increased by 4 per cent, yet train kilometres increased by only 1 per cent even though revenues increased by 3 per cent (Ref. 1.40, page 192).

Investment in national rail infrastructure increased sharply after the Hatfield accident in 2000 (see Chart 9), as money needed to be spent renewing the track. Other infrastructure investment has been concentrated on several large scale projects, such as the High Speed Rail Link to the Channel Tunnel, and the modernisation of the West Coast Main Line. The rising demand for rail travel, however, is highlighting the acute problems of bottlenecks at such pressure points as the London stations and Birmingham New Street.

The 2007 Rail White Paper *Delivering a Sustainable Railway* sets out an investment plan up to 2014 which concentrates on reducing public subsidy, while increasing capacity through targeted investment for existing stations and lines (Ref. 1.52). It looks ahead thirty years, foreseeing a doubling of passenger and freight traffic, but it states that future uncertainty precludes any commitment now to wider electrification of the network or investment in high speed lines.

Despite its long years of decline, unlike the downmarket image often attached to bus travel, rail has largely been able to retain a classless image. In this case, retaining two classes of travel has perhaps assisted in maintaining a customer base across a wide social spectrum. The rise in rail travel also perhaps acts as an indicator of a long term public frustration with road congestion. The modernisation of services can also act as a powerful agent in switching modes. For example, prior to the introduction of faster tilting Pendolino trains on the West Coast Main Line in 2005, the ratio of business travellers between Manchester and London was 70:30 in favour of air against rail travel. Since the introduction of the city centre to city centre Pendolino, the figures have been reversed in favour of rail. After the long term decline, therefore, the preservation of a comprehensive strategic network of rail services, with reasonable journey times, has facilitated growth.

## **4. Struggle of the bus to remain competitive**

### **4.1 A brief heyday**

The heyday of the motor bus as a true mass means of transport in Britain was relatively brief. In the earlier years of the Twentieth Century, urban road passenger transport was dominated by the tram, and it was only in the period immediately after World War Two that the bus became dominant. However, just as this transition from tram to bus was being completed in the mid 1950s, the bus began to face fierce competition from the inexorable growth in private car ownership, a trend that has continued until the present day. Nevertheless, the significant growth in bus usage in London in recent years does at least suggest the possibility of a wider comeback for bus travel.

Numbers of tram passengers in Britain reached their peak in 1927-28, with 4,706 million. A steady decline followed, and with the large-scale closures of tram lines in the 1940s and 1950s, the figure had collapsed to just 10 million in 1970. The position for buses was also complicated by the increasing use in urban areas of trolley buses in the 1930s and 1940s, with a peak here in passenger numbers of 2,011 million in 1948-49. By 1970, however, only 34 million trolleybus passengers were carried.

No full figures for bus passenger numbers are available until 1931-32, when they carried 5,269 million, as compared with the 4,292 million carried by trams and trolleybuses. As the latter declined, so buses steadily increased from year to year. In 1937-38 buses carried 6,664 million, which had almost doubled in 1949 to 12,862 million. The increase continued, and reached a peak of 13,562 million in 1955, followed by an equally continuous decline, with only a slight recovery between 1958 and 1961 (see Chart 36). In 1970 there were 9,110 million bus passengers, about a third less than the peak fifteen years earlier.

The passenger and vehicle mile figures tell a similar story. Consequently, bus vehicle miles reached a peak of 2,331m in 1956. Overall, taking buses and trams and trolley buses together, the peak year was 1952. For buses, passenger miles subsequently fell considerably quicker than vehicle miles, so that overall passenger miles fell by a third from 1951 to 1970 (see Chart 37), while vehicle miles fell by only about a sixth. This was in a period when, overall, the number of double deck buses declined only marginally more than the number of single-deckers, and total seating capacity remained more or less constant (Ref. 1.53, pages 224-5).

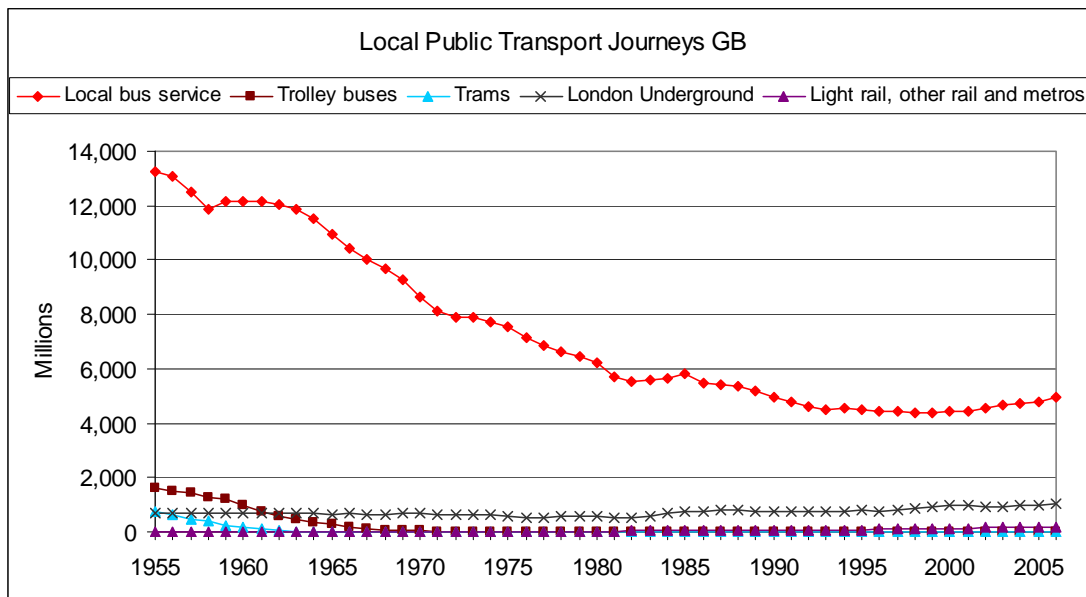


Chart 36. "Local public transport journeys"  
(source: TSGB series, specifically Ref. 1.2, Table 1.2)

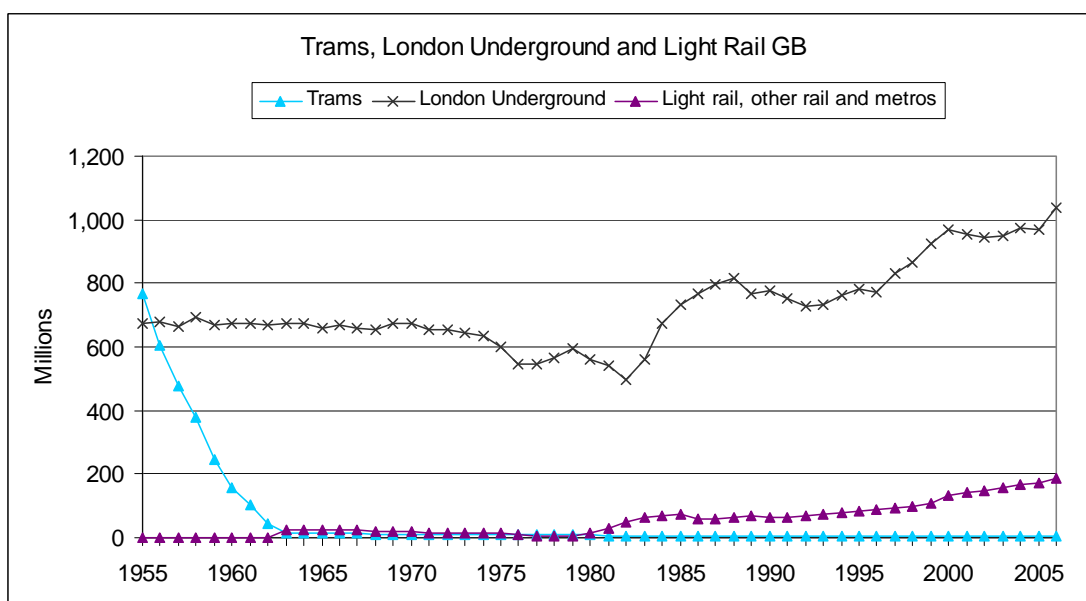


Chart 37. "Trams, London Underground and light rail journeys"  
(source: TSGB series, specifically Ref. 1.2, Table 1.2)

## 4.2 A regulated industry

The bus industry in Britain developed in a highly distinctive way, with regard to both regulation and structure. The *1930 Road Traffic Act* had enormous implications for the industry and dominated its operation for over half a century. The Act set up a system of licensing whereby area Traffic Commissioners controlled vehicles, drivers and conductors, routes, fares and details of services for all public service vehicles. The most significant power of the Commissioners was to grant road service licences for individual routes. This quantity licensing helped to set standards, but also generally prevented any significant competition between operators. Consequently, operators had considerable stability, and generally practiced cross-subsidy between profitable and socially necessary loss-making routes.

Nevertheless, this stability tended to mask the decline for the industry that took place from the late 1950s. The position of the bus industry in the 1960s is well illustrated by the report produced in 1963 on *The Reshaping of British Railways* by Richard Beeching (Ref. 1.45). As seen in the section on Rail, the Report recommended large scale station and line closures, but a significant assumption was that bus operators would automatically fill the gaps left by the railways. In reality, by the 1960s the bus companies themselves were in financial decline and were not in a good position to provide the policy resource favoured by Beeching, particularly in the rural areas (Ref. 1.3, page 58).

The Traffic Commissioners regulated the industry, but its organisation developed along divergent paths. In London, the London Passenger Transport Board was set up in 1933, as one of the first nationalised industries, while in most major cities and towns the bus services were publicly owned and operated by the local authorities. In contrast, the inter-urban and rural services were generally operated by private sector companies, chiefly the conglomerates British Electric Traction (BET) and Tilling.

The Labour government elected in 1945 sought to coordinate and rationalise transport through setting up the British Transport Commission (BTC), and this included taking control of railway bus interests and nationalising a number of bus companies, including Tilling. In the event, the BTC proved unwieldy and inefficient, and bus interests eventually became part of a more commercially orientated Transport Holding Company (THC). However, by the late 1960s, as it became clear that the bus industry was in long-term decline, so government sought more radical solutions. Thus the *1968 Transport Act* set up large scale Passenger Transport Authorities (PTAs) for the West Midlands, Merseyside, South East Lancashire/North East Cheshire (i.e. the Greater Manchester area), Tyneside and Glasgow. The *1968 Transport Act* also established a National Bus Company (NBC), based on the public transport operations of the THC and the newly state owned BET companies.

The 1970s therefore carried the hope that large-scale organisation and planning would produce a more commercially orientated and efficient bus industry, and during the decade further legislation placed a new coordinating role on local authorities outside the PTAs. In the event, the decade was marked by a further operational and financial decline in the industry, so that local authorities began to pay quite significant subsidies. For example, in the case of the NBC, between 1974 and 1976 the real cost of fares rose by 20 per cent, and this increase was not surprisingly reflected in the steep decline in passenger journeys for this period, from 2,177 million to 1,856 million (see Chart 36). In an era when the demand for car ownership had an apparently autonomous quality the extent to which real increases in fares can be equated with loss of passengers is impossible to calculate, but the increases during this period indicated that, as a commercial undertaking, the NBC was approaching breaking point (Ref. 1.54, page 218).

In 1976, NBC fares rose by an average of 26 per cent, while passenger journeys fell by 9 per cent, but in contrast to previous years there was a consolidated profit of £4.4m. This improved result reflected a continuing real increase in fare levels and a large cut in vehicle miles run from 724 million to 697 million (see Chart 38). In addition, the NBC borrowed £7m from the Treasury in 1976, while it was also forced to re-borrow a £10m instalment on its capital debt. At the end of 1976, therefore, NBC's total liability stood at £128.6 million. The NBC was remaining viable at the expense of heavy fare increases, drastic service cutbacks, and large borrowings from the government at high interest rates (Ref. 1.54, page 220).

The new system of local authority grants introduced in the 1970s, combined with the deteriorating financial position of the NBC, produced an enormous increase in the level of subsidy received by the Company. County Council policies towards public transport and the consequent level of subsidy could vary a good deal, but nearly all NBC subsidiaries had

ceased to be free-standing commercial enterprises. Thus the first so called Section 203 grants (from the *1972 Local Government Act*) in 1975 totalled £6.6 million. By 1976, Section 203 Grants had risen sharply to £21.6 million and by 1984 this figure stood at £64.7 million, representing 9 per cent of operating income. In addition, concessionary fares amounted to 5 per cent of operating income in that year.

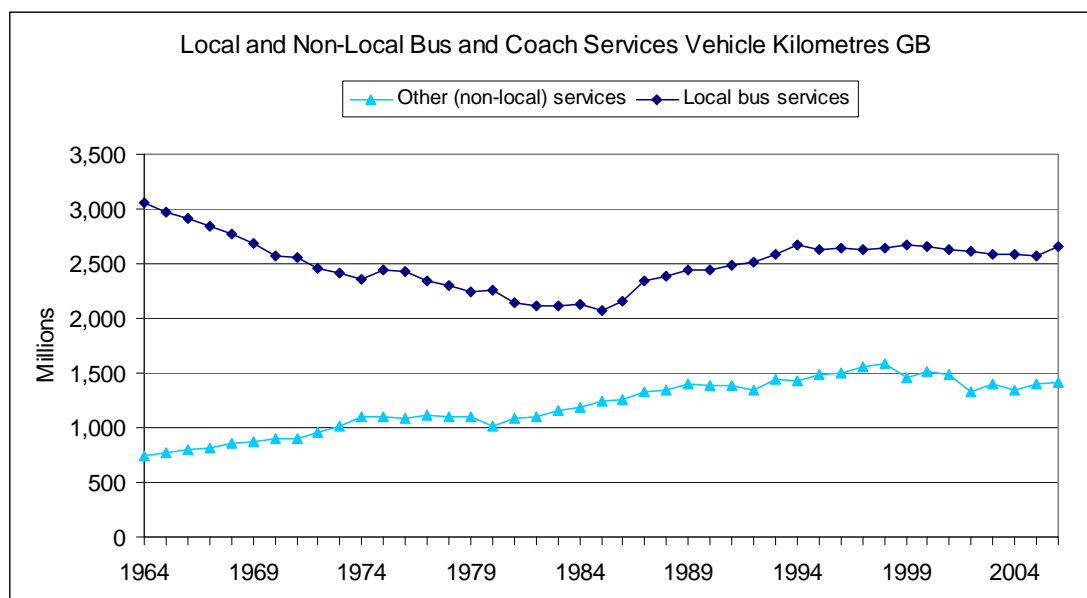


Chart 38. "Local and non-local bus and coach services vehicle kilometres"  
(source: TSGB series, including Ref. 1.2, Table 6.9)

### 4.3 Radical policy change

The Conservative government elected in 1979 had a commitment to reform the licensing system as a means of revitalising the bus industry. Changes were made gradually with the *1980 Transport Act* included the delicensing of coach services and the introduction of Trial Areas where all road service licensing was suspended. However, the major turning point arrived with the *Buses White Paper* in 1984 (Ref. 1.55). The five radical proposals were: that all road service licensing should be abolished (except in London); local authorities would put out tenders for subsidised services; the NBC to be privatised in the form of small, free standing units which would become independent companies; and municipal bus operations to be incorporated into companies still owned by their District Councils.

The government believed that the abolition of road service licensing would bring large benefits, including lower fares and greater variety in services, so that overall patronage should increase. Cross-subsidy was seen as a particular weakness of the existing system. The government suspected that local authority revenue support was being used partly for this purpose, and so in future councils would put out tenders for subsidised routes not registered as commercial by the operators. In this market approach, the statutory duties of Counties to coordinate public transport were considered inappropriate, so that the government intended to change the duties of the County Councils to one requiring them to secure the efficient provision of such transport as they believed necessary, after due consideration, but which were not provided by a free market. However, it could be said that the essence of the council-operator relationship remained intact, although the local authority would be subsidising individual services rather than entire networks. Similarly, although the PTAs were to disappear with abolition of the Metropolitan Counties in 1986, their functions were transferred to joint boards of elected members appointed by district councils.

The 1985 *Transport Act* provided the legislation for the policies set out in the 1984 White Paper, and between July 1986 and April 1988 the NBC sold all its 72 subsidiary companies for a total exceeding £325 million. Nearly all local authority bus operations (including London) were also subsequently sold to the private sector.

#### 4.4 Further decline but capital revival

The radical redefinition of bus policy in the mid to late 1980s was perceived by government as representing a new dawn for the industry. In particular, deregulation outside London commenced in 1986. Significantly, London Transport operated a different system, where the distinction between commercial and supported services did not apply, and instead a system of competitive tendering for routes was in operation. However, overall it cannot be said that the long-term impacts of the radical policy shift matched the government’s expectations.

In 1995 Peter White assessed the outcomes of deregulation and privatisation, and calculated that in the deregulated areas as a whole (outside London) between 1985-86 and 1994-95 passenger trips fell by 28 per cent (Ref. 1.56) (see Chart 39). On the other hand, in London, with its system of tendering services, passenger trips grew by 1 per cent in the same period. The sharpest fall in ridership occurred in the Metropolitan areas at 36 per cent. In the English Shires, Wales and Scotland, the fall was about 20 per cent. In contrast, over the same period bus vehicle kilometres rose by 28 per cent in Britain as a whole (see Charts 38 and 40). It was concluded that the net increase roughly corresponded to the growth in volume of kilometres run by minibuses and midibuses. Deregulation had seen a rapid growth in the numbers of minibuses because of their greater flexibility and lower operating costs when compared with full size buses (Ref. 1.56, page 76). White also observed that overall, passengers did not appear to have benefited from lower fares through deregulation, and these had risen above the rate of inflation in the metropolitan areas, and largely in line with inflation elsewhere (see Chart 35).

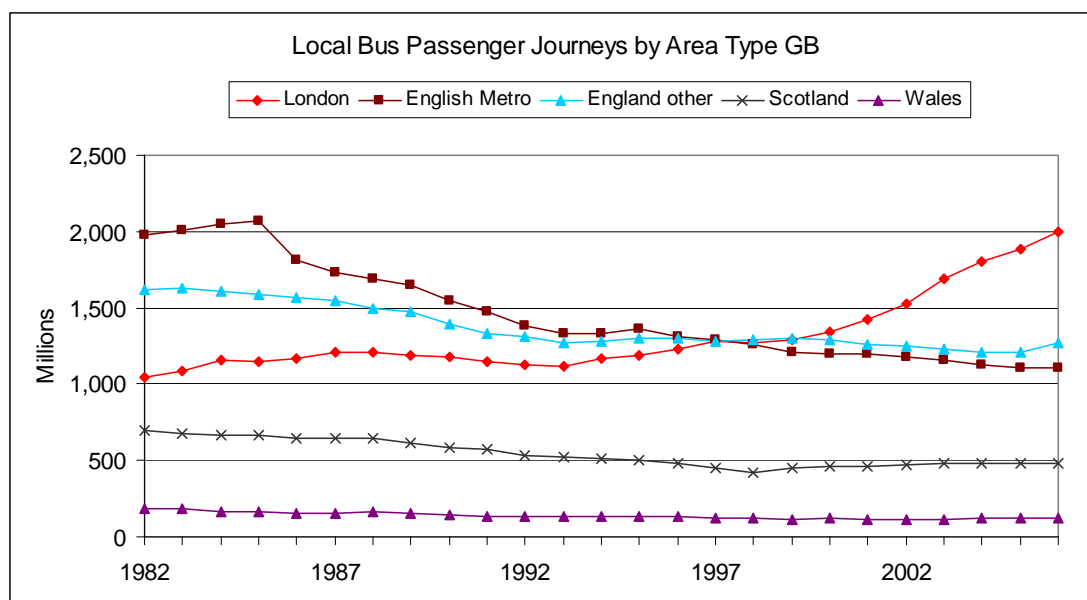


Chart 39. “Local bus passenger journeys by area type”  
(source: TSGB series, including Ref. 1.2, Table 6.13)

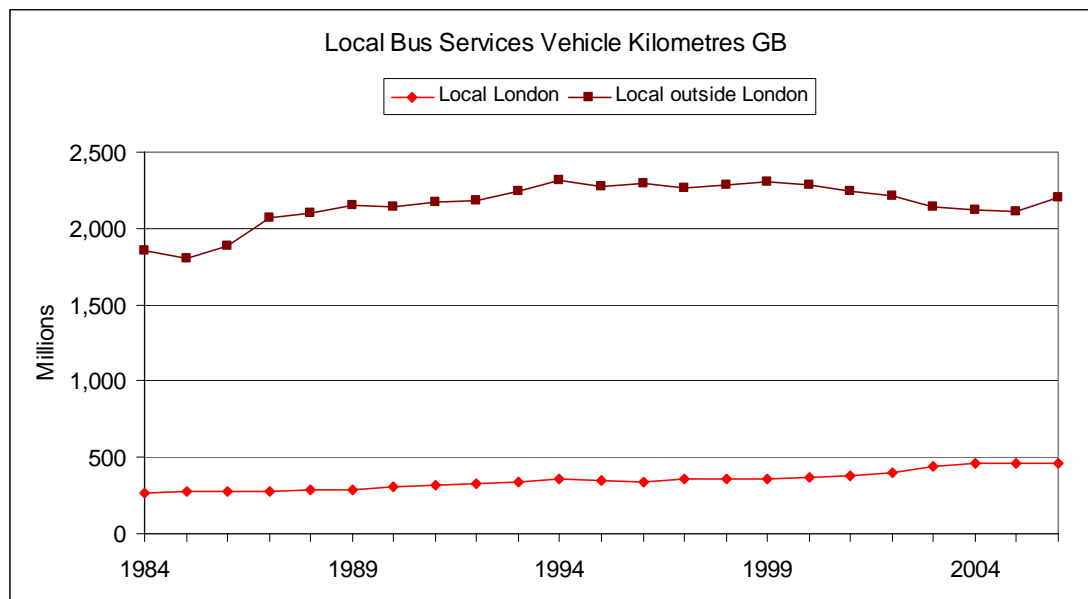


Chart 40. “Local bus services vehicle kilometres”  
(source: TSGB series, including Ref. 1.2, Table 6.9)

White concluded that, although changes since deregulation had clearly produced major reductions in operating cost per vehicle-kilometre (at 2006-07 prices, these decreased from 166 pence in 1987 to 109 pence in 1989, before increasing again to 132 pence in 2005), the alarming drop in ridership, coupled with the substantial growth in bus-kilometres run, had produced a fall in average loads such that cost per passenger carried had fallen very little. Consequently, despite the sharp fall in unit costs, bus industry profitability remained poor. This was due to the low loadings now found, and high proportion of services which operators had been willing to run on a ‘commercial’ basis. Nevertheless, in terms of public expenditure, substantial reductions had occurred (see Chart 41). Thus revenue support outside London fell by about 58 per cent between 1985-86 and 1994-95. In London, there was an even greater reduction of 75 per cent (Ref. 1.56, pages 78-9).

Since the 1980s, bus travel has continued to find it difficult to compete with the car. For example, whereas the overall cost of motoring has remained at or below its 1980 level in real terms, bus and coach fares are 42 per cent higher in real terms over the same period (see Chart 35). Nevertheless, the past decade has seen some evidence of recovery in bus use. Thus although bus and coach passenger kilometres fell from 52 billion passenger kilometres in 1980 to 43 billion passenger kilometres in 1992, there has subsequently been an increase back to 50 billion passenger kilometres in 2006. Similarly, average distance travelled by local bus per person increased from 268 to 296 miles a year, an increase of 10 per cent between 1995-97 and 2006 (Ref. 1.2, Table 1.3). This is almost entirely due to increased bus use in London.

In London bus patronage remained steady after deregulation in 1985/86 at about 1.2 billion journeys and increased after 1996 to 2.0 billion journeys in 2006 (see Chart 39). Bus journeys in the rest of Great Britain declined from 4.5 billion journeys in 1985-86 to 3.3 billion in 1993-94. Since then there has been slow decline to 2.9 billion journeys in 2005-6, although 2006-7 recorded the first increase since 1985-6 with an increase of 69 million journeys. The most substantial fall in the number of bus journeys has been in the English metropolitan areas, where the number of journeys declined by 49 per cent from 2.1 billion journeys in 1985-86 to 1.1 billion journeys in 2005-06. Between 1985-86 and 2005-06, the number of bus journeys fell by 31 per cent in Scotland, by 29 per cent in Wales and by 27 per cent in English non-metropolitan areas.

It is not easy to account fully for the great disparity in bus usage between London and the rest of Britain. The introduction of the Congestion Charge in London and associated bus improvements in 2003 is likely to have had a significant impact, but the trend in bus use in London was already on a significant upward path before this time. The level of traffic congestion in the capital itself is likely to have contributed to the increase, together with the commitment by Transport for London to increase public transport subsidies and to introduce a universal smartcard payment system (Oyster card). Public subsidy of buses in London has increased sharply from £67 million in 2000-01 to £625 million in 2006-07 (2006-07 prices). Hence from Chart 41 it can be observed that local authority support for buses in London accounts for more than half of the total local authority support for buses in Britain.

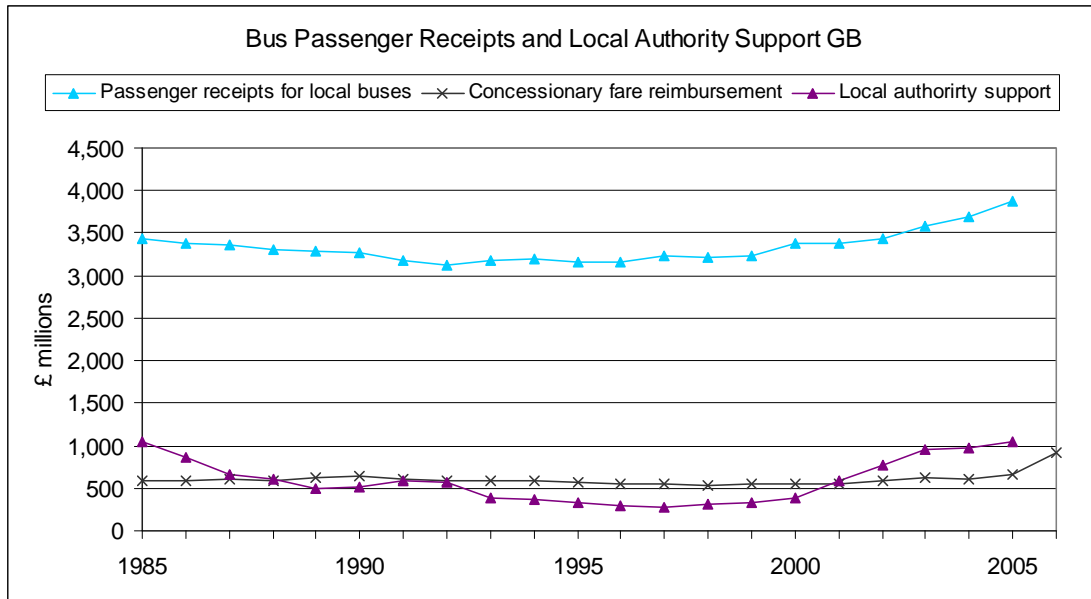


Chart 41. “Bus passenger receipts and local authority support”  
 (source: TSGB series, including Ref. 1.2, Tables 6.11 and 6.14)

#### 4.5 Innovation and image

Given the rise in bus usage in London, there has in recent years been pressure from other areas for the system of bus franchising that operates in the capital to be expanded to the rest of Britain, particularly in the large conurbations. Underlying this debate is the at least implicit reassessment of the bus policies enshrined in the *1985 Transport Act* that have set the agenda for the past two decades. The government has stopped short of the re-introduction of quantity regulation and has instead encouraged the establishment of formal partnerships between local authorities and bus operators.

Powers for local authorities to introduce Quality Partnership Schemes (statutory partnerships where local authorities are legally responsible for providing facilities and bus operators are legally responsible for providing vehicles of certain standard) and Quality Contract Schemes (statutory contracts where local authority specifies bus services to be provided and standard required and lets contracts to bus operators) were provided in the *2000 Transport Act*. However, these partnerships have not proved easy to implement with no Quality Contract Schemes having been introduced and the first Quality Partnership Scheme having only been established in November 2007 in Sheffield (for Barnsley Road in North Sheffield). Government is currently looking at changing the legislation to enable them to be adopted more widely. In the meantime, significant success has been achieved in some areas through voluntary partnerships between local authorities and bus operators. For example, in Brighton a partnership between Brighton and Hove City Council and the single principal bus operator

has involved provision of bus priority lanes, marketing campaigns and real-time information. Passenger journey growth of 62 per cent occurred between 1993 and 2005.

A long-standing and more widely used method of boosting bus use is through explicitly integrating it with car use through park and ride sites. For example, one of the pioneers of park and ride is Oxford, where the first site was introduced in the 1970s, and there are now four major sites providing buses into the central area. Consequently, Oxford is an area that runs counter to the national trend with bus use increasing significantly over the past two decades. At the same time, the policy has attracted controversy over the environmental impact of the park and ride sites, while ironically there have also been problems with bus congestion in the centre of the city (Ref. 1.57, Ref. 1.58).

Another potential area of growth is in school travel, where the trend away from children walking to school has provided opportunities to provide public transport as an alternative to the car. In some counties, such as Staffordshire, fleets of buses built for this specialist purpose have been acquired.

The Bus Passenger Satisfaction Survey has found that overall satisfaction with buses has increased slightly between 2001-02 and 2006-07 (+4 per cent in London, +1 per cent in Metropolitan areas and +2 per cent in non-Metropolitan areas) (Ref. 1.34, Table 3.1). However, satisfaction with the value for money of buses has decreased (-9 per cent in London, -4 per cent in Metropolitan areas and -3 per cent in non-Metropolitan areas). It is important to note that surveying bus passengers by definition only captures individuals who through choice or necessity are using the bus. Views on bus use not surprisingly differ between users and non-users. ONS Omnibus results found that 72 per cent of those who had used the local bus services in the last year rated services as very or fairly good; 13 per cent as very or fairly poor. Among non-users, 44 per cent rated services as good; 16 per cent as poor and 24 per cent did not know (Ref. 1.34, page 34).

It is often stated that the bus continues to suffer from a long-standing image problem that it is principally a means of travel for the young, the old, and those not able to afford a car. Perhaps this image was best summed up by Prime Minister Margaret Thatcher in the 1980s when she declared: *“A man who, beyond the age of 26, finds himself on a bus can count himself a failure.”* A recent Defra survey, however, found that a very large majority of respondents rejected the proposition *‘travelling by bus is mainly for people who can’t afford any better’* – 72 per cent disagreeing. Quite a high proportion (46 per cent) nevertheless indicated *‘I would only travel by bus if I had no other choice’* (Ref. 1.34, pages 33-4). It will be interesting to see if the more positive attitude towards the bus that has developed in London and some other towns and cities will become more widespread.

## **5. Time to take a stroll**

### **5.1 Adjusting to a new world of mobility**

No other modes of transport have experienced such drastic shifts in fortune over the last half-century as those of walking and cycling. It is not only a matter of the bare statistics that tell the story. Of equal importance is the manner in which perceptions of walking and cycling have changed so much during this period. In the early post war years, when car ownership was largely restricted to an economic and social elite, for the majority of the population walking and cycling represented the basic means of mobility over short and medium distances, such as the journey to work or shopping and leisure trips. To a large degree, society was structured on the assumption that an individual would work within a mile or two of home, that nearly all basic shopping was available within a comfortable walking distance, and that the local pub, club or dance hall was similarly accessible.

Amidst the massive changes in society that have been brought about through the growth in car ownership, it is easy to forget how still relatively recent was the old world of living (and thinking) locally. This revolutionary change is illustrated particularly well by the comparative figures in Britain for road traffic by type of vehicle. In 1949, it was estimated that pedal cycles in total covered 23.6 billion kilometres. In comparison, cars and taxis covered 20.3 billion kilometres. By 2006, the figure for pedal cycles had declined to 4.6 billion kilometres, but for cars and taxis it had escalated to 402.4 billion kilometres (Ref 1.2, Table 7.1). In fact, the figure for pedal cycles has been relatively stable now for forty years, so that in 1969, as in 2006, it stood at 4.6 billion kilometres, while the lowest figure (3.8 billion kilometres) was as long ago as 1973. On the other hand, in 1984 the figure was 6.4 billion kilometres.

The figures indicate the collapse in cycling that took place through the 1950s to the 1970s as car ownership grew substantially. The subsequent small rise in the late 1970s and early 1980s suggests that, as the novelty of car ownership began to wear off, and experience and perceptions of road congestion grew, then at least a limited number of people were choosing to cycle, on some occasions, for convenience or leisure. However, the fact that this increase has not been maintained implies that, in the modern world, cycling has still to break out of its niche use. One of the chief reasons for this limited use is likely to be that, in modern traffic conditions, cycling is widely perceived as being unsafe, particularly on major roads. This perception is reflected in the distribution of cycling by class of road. Consequently, of the 4.6 billion kilometres travelled by cycle in 2006, 3.8 took place on minor roads, and only 0.8 on major roads (Ref. 1.2, Table 7.4).

Ironically, no doubt reflecting the reduction in cycling, the number of pedal cyclists killed on Britain's roads has declined from 805 in 1950 to 146 in 2006 (with a low figure of 127 in 2000). For pedestrians, there has also been a decline in numbers killed, but the figures overall are much larger than for cyclists. Thus 2,251 pedestrians were killed in 1950 and 675 in 2006 (Ref. 1.2, Table 8.1). The fatality rate per 100 million vehicle kilometres is 4.6 on foot, 3.6 for cycling, 0.3 for car travel and 11.1 for motorcycling (Ref. 1.2, Table 1.7).

The higher figure for pedestrians killed compared with cyclists is a reminder of the ubiquity of walking - many more people walk compared with riding a bike. The enduring significance of walking as an activity is well illustrated by a comparison of figures for 2006. On the one hand, the use of journey distance can create an impression of the dominance of motorised transport, with 80 per cent of the total travelled by car, and only 3 per cent on foot (see Chart 42). However, walking accounts for 24 per cent of all trips made and 42 per cent of education/escort to education trips and 25 per cent of shopping trips and of personal business trips (see Chart 43). Similarly, in the case of time spent travelling, walking accounted for an average of 17 per cent of all journey time, compared with 60 per cent by car (Ref. 1.31, Table 3.5).

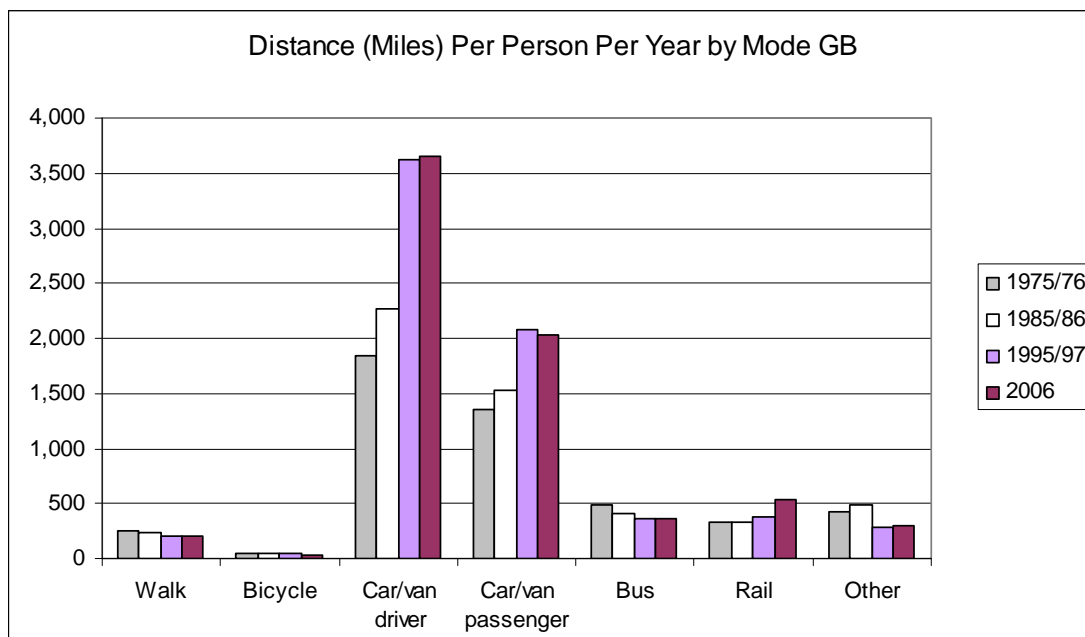


Chart 42. "Distance per person per year by mode"  
 (source: NTS series, including Ref. 1.31, Table 3.1)

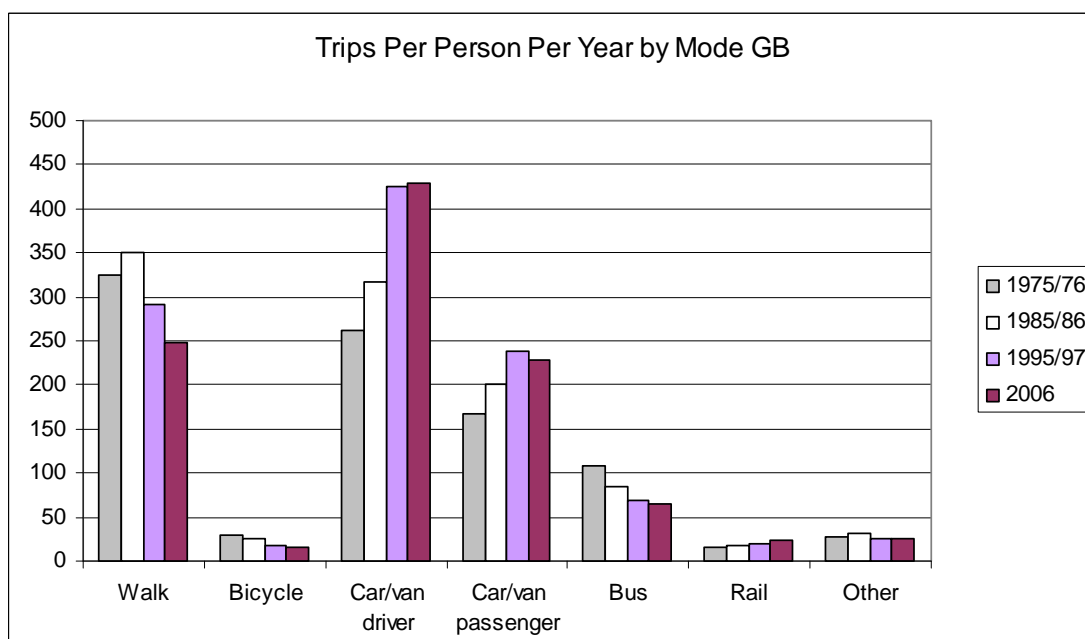


Chart 43. "Trips per person per year by mode"  
 (source: NTS series, including Ref. 1.31, Table 3.2)

In these latter contexts, walking therefore remains an important activity for a large percentage of the population, although it should also be noted that the number of walking trips per person per year fell by 15 per cent between 1995-97 and 2006 (see Chart 43). The time spent walking or cycling has also fallen by 8 per cent since 1995-97, while over the same period the time spent travelling by car has increased by 4 per cent (Ref. 1.31, page 19). Differences amongst the population are highlighted by the result in 2006 that 59 per cent of people say that they take a walk of 20 minutes or more at least once per week, while 59 per cent say they do this less than once a month (Ref 1.31, Table 3.8).

## **5.2 Role of policy**

Given the decline in walking and cycling levels over the last fifty years it is important to consider what role policy has had. Up to the mid 1990s the main thrust of transport policy was on providing road capacity to meet forecasted traffic demand. Little consideration was given to walking and cycling, except to protect these modes from the worst effects of motorised traffic (Ref. 1.59). As growing awareness rose about the environmental impacts of road transport, the Department of Transport produced a National Cycling Strategy with targets to double cycling use by 2002 (on 1996 levels) and quadruple them by 2012 (Ref 1.60). Guidance was given on how local authorities could develop local cycling strategies.

The Transport White Paper of 1998 had aims to make it easier to walk and cycle (Ref. 1.26, pages 37-9) and included specific support for Clear Zones in town centres, 20 mile/hour zones and Home Zones in residential areas and Safe Routes to School. An intention existed to publish a National Walking Strategy shortly afterwards, but this failed to materialise. The emphasis in the Ten Year Plan in 2000 (Ref. 1.27) was on major infrastructure investment and, although it stated that it expected local authorities to significantly expand schemes to make walking and cycling easier and safer, no specific funding provision was allocated to this. The National Cycling Strategy targets were restated as a trebling of cycling trips from the 2000 level by 2010.

A reinvigorated focus emerged in 2004 with a Walking and Cycling Action Plan which identified 42 specific actions associated with the walking and cycling environment, better facilities, influencing behaviour and skills and capacity (Ref 1.61). However, a move was made away from national target setting to setting of local targets for walking and cycling by local authorities. Incidentally, evidence from the National Travel Survey indicates that the average number of cycling trips made per person has decreased from 18 in 1995/97 to 16 in 2006 (Ref. 1.31, Table 3.2). Most recently, the 2006 Eddington Report (Ref. 1.20) concluded that small local schemes, including those to promote walking and cycling, potentially represent excellent value for money in terms of welfare benefits but require greater evidence of their impacts.

Next, we turn to look at where there are opportunities to increase walking and cycling and what has been achieved in recent years.

## **5.3 Children's travel**

One important area where the position of walking and cycling has relatively stabilised in recent years is in travel to school. In the 1950s and early 1960s, it would largely have been assumed that the vast majority of children would walk or cycle to school or use public transport. As car ownership grew, however, convenience and perceptions of safety led many parents to use the car for taking children to school. Nevertheless, this trend, while not being reversed, has levelled off in recent years. Consequently, in 2006, just over half (52 per cent) of trips to school by primary school children were made on foot which is similar to the proportion for 1995/97 (53 per cent) (see Chart 44). Over the same period, the proportion of trips by car increased slightly from 38 to 41 per cent.

Amongst secondary school children, the proportion of trips to school made on foot was similar in 2006 (41 per cent) to 1995/97 (42 per cent) and the proportion by car was unchanged at 20 per cent (see Chart 45). In addition, 3 per cent of secondary school pupils cycled to school in 2006 where it had been 2 per cent in 1995/97. This stabilisation has taken place despite the fact that the average length of trip to school for children aged 5 to 10 increased from 1.3 to 1.5 miles between 1995/97 and 2006, and for pupils aged 11 to 16 increased from 2.9 to 3.4 miles (Ref. 1.31, page 30). One reason for this stabilisation could be the large increase in recent years of School Travel Plans, designed to promote greater amount

of use of alternatives to the car for school travel. By 2006, 56 per cent of all schools had adopted a Travel Plan, and the government has a target of 100 per cent of schools by 2010.

While the above statistics present a promising picture, concern about children’s safety when travelling on their own has increased over the last few years (Ref. 1.31, Tables 6.8 and 6.9). On the journey to school there has been an increase in the number of children aged 7 to 13 accompanied to school from 55 per cent in 2002 to 61 per cent in 2006. Traffic danger was cited as a reason for this by 53 per cent of parents and fear of molestation by 34 per cent of parents. Similarly, the number of children never allowed to cross roads alone increased from 25 per cent in 2002 to 30 per cent in 2006.

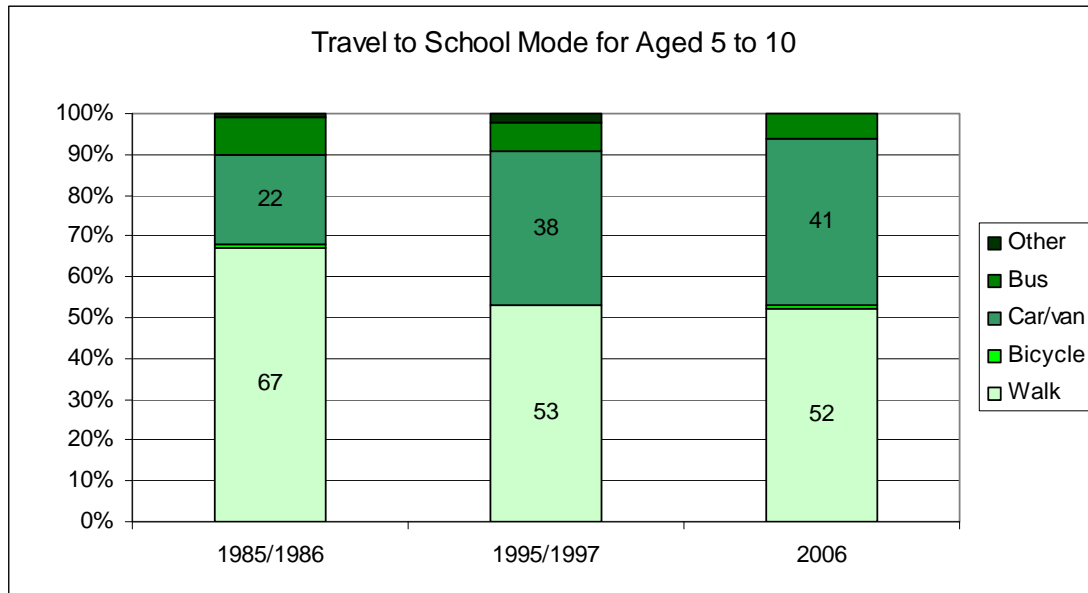


Chart 44. “Travel to school mode for aged 5 to 10”  
(source: NTS series, including Ref. 1.31, Table 4.5)

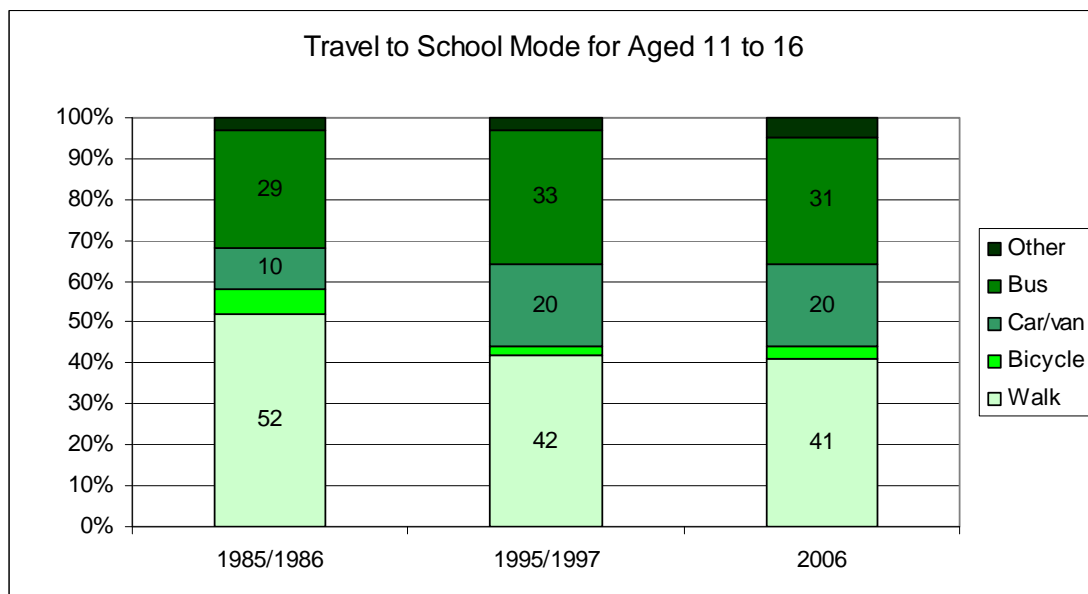


Chart 45. “Travel to school mode for aged 11 to 16”  
(source: NTS series, including Ref. 1.31, Table 4.5)

## 5.4 Health time-bomb from inactive lifestyles

The large numbers of children travelling to school by car, together with general restrictions placed on their movements for reasons of road and personal safety, are principal explanations blamed for the significant rise in childhood obesity. Childhood obesity has risen from 11 per cent to 18 per cent among boys aged 2 to 15 between 1995 and 2005 and from 12 per cent to 18 per cent among girls aged 2 to 15 in the same period (Ref. 1.40, pages 169).

Contributing risk factors are diet and physical exercise. A more sedentary life style generally is also reflected in figures for the wider population. For example, between 1993 and 2003 the average weight for a man increased by 3.5 kilograms (to 82.5 kilograms) and by 3 kilograms (to 69.5 kilograms) for a woman. Consequently, over the same period the proportion of adults with a desirable Body Mass Index fell to 29 per cent for men and 34 per cent for women. There was no significant change in the proportion of adults defined as overweight, but there was a marked increase in the proportion classed as obese, so that in 2005 22 per cent of men and 24 per cent of women were obese, compared to 13 per cent and 16 per cent respectively a decade previously (Ref. 1.40, pages 167-70).

The promotion of the benefits of walking and cycling is therefore now firmly linked to the public health agenda. In turn, these developments are also joined to the environmental agenda where, as will be seen in Section Six, the concerns about the role of vehicle emissions in affecting public health and contributing to climate change are shaping a similar emphasis on reducing car use and the promotion of walking and cycling as an ethical and healthy alternative. Nevertheless, it would be extremely naïve to assume that the hearts and minds of millions of people, firmly wedded to the advantages of personal mobility through car ownership, will automatically change their behaviour through campaigns to promote walking and cycling.

Whilst, official statistics are yet to show a general increase in walking and cycling activity, attitudinal surveys show people recognise benefits of these travel modes. A 2002 ONS Omnibus survey (Ref. 1.62, page 7) found that virtually all respondents agreed that people should be encouraged to walk to help their health (97 per cent), help the environment (94 per cent) and to ease congestion (92 per cent). Slightly fewer respondents felt the same way about people being encouraged to cycle for these reasons with the same pattern of decreasing support across the three issues of health (87 per cent), the environment (79 per cent), and congestion (73 per cent). The survey also found that 68 per cent of respondents agreed that cyclists should be given more priority on streets with 73 per cent holding the same view for pedestrians (Ref. 1.62, page 10).

Policy and practice is changing when it comes to street design with emphasis moving away from the motorist to pedestrians, cyclists and other users. In particular, the Manual for Streets, published in 2007 (Ref. 1.63), provides guidance for residential streets and features ideas for creating walkable neighbourhoods (high density development, permeable networks, shared space for vehicles and pedestrians and slower traffic speeds (20 mile per hour speed limits, reduced visibilities, narrower streets). Many of the ideas stem from experience in other countries in Europe (such as Netherlands, Denmark and Germany) where more travel is undertaken on foot and by bicycle.

Scope for increased walking and cycling is apparent for short journeys. For the shortest journeys of less than one mile distance walking is the dominant mode accounting for 78 per cent of journeys (see Chart 46). The car is, however, used for 19 per cent of these journeys. For journeys of between one mile and two miles walking accounts for 31 per cent of journeys and cycling for 3 per cent. There is recognition that these journeys could be substituted by walking or cycling. 58 per cent of respondents to a 2002 ONS Omnibus survey said they currently use a car to make journeys within walking and cycling distance (Ref. 1.62, page 13).

Emphasis could be targeted on increasing the proportion of these journeys made on foot or by bicycle. Most people are able to walk distances up to two miles and in 2005 it was found that 43 per cent of people aged five or over own a bicycle and a further 1 per cent have use of a bicycle (Ref. 1.64). The pressure of busy lives are often mentioned as a barrier, though, with 42 per cent of the 2002 ONS Omnibus survey respondents agreeing they would use their car less if they had more time to walk and 30 per cent saying the same if they had more time to cycle (Ref. 1.62, page 12).

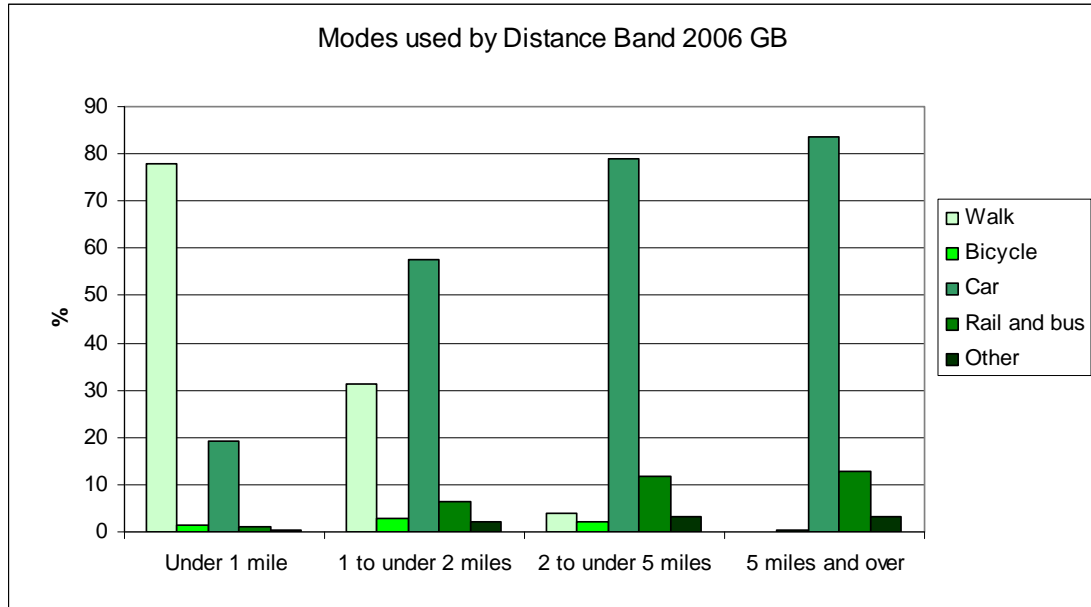


Chart 46. "Mode used by distance band 2006"  
(source: Ref. 1.31, Chart 3.1)

## **6. Environmental consciousness**

### **6.1 From NIMBY-ism to Friends of the Earth**

Since 1960, environmental campaigning in the area of transport, and the manner in which environment issues are defined and analysed, has been transformed beyond recognition. From being unconsidered, or at best only at the fringes of the policy process, environmental concerns are now part of the political and economic mainstream. Reflecting these developments, environmental groups such as Friends of the Earth (FoE) have evolved from small scale protest organisations to comparatively large businesses, while the campaigning itself has become embedded within the policy development process. For example, although there might be controversy on the contribution of transport to global warming through carbon dioxide emissions, the potentially apocalyptic implications of global warming are not matters that can be consigned to the margins in framing transport strategies.

In contrast to the complexities and dilemmas of modern environmental issues, in the 1960s the emphasis was on facilitating personal mobility as a result of the rapid rise in the numbers of vehicles on the roads. Any protests tended to take the form of *Not In My Back Yard* (*NIMBYISM*) objections to infrastructure development. Often these objections could be kept to a minimum. For example, when the first section of the M1 was being constructed in the late 1950s, Owen Tudor Williams, of Sir Owen Williams and Partners, the consultant civil engineers on the project, personally visited every landowner affected by the route, and patiently argued the case for a motorway system. As a result, there was not a single objection to the construction of the road (Ref. 1.65).

Instead of being an issue in its own right, the environmental implications of transport projects tended to be placed in a wider context of preserving the countryside. Consequently, Jordan and Maloney (Ref. 1.66), quoting Dalton (Ref. 1.67) and Cotgrove (Ref. 1.68) point out that the conservation movement began to develop as early as the Nineteenth Century, with the founding of the National Trust in 1850 and the Society for the Protection of Birds in 1889. A new impetus came with the *1947 Town and Country Planning Act* that enhanced the power of government to preserve the countryside. It was only in the late 1960s with a new wave of European environmentalism that the character of campaigning changed from conservation to a critique of prevailing methods of production and patterns of consumption.

Consequently, between 1957 and 1973 the number of local groups registered with the Civic Trust in the UK rose from 200 to 1,000. Environmental groups of the 1960s and 1970s therefore portrayed a gloomier picture of the 'inevitable' environmental catastrophe, which could only be avoided by fundamental and radical changes in the values and institutions of industrial societies (Ref. 1.66).

This new definition of environmental concerns produced an expansion in the membership of environmental groups, in both the UK and the United States of America. For example, in 1981 FoE (UK) had 18,000 members; by 1991 it had 114,000. In the same period, the Royal Society for the Protection of Birds membership grew from 441,000 to 852,000, while Greenpeace (UK) increased its membership from 30,000 to 408,000. In the United States, in roughly the same period (1980-90), the Sierra Club grew from 181,000 to 630,000, the National Audubon Society increased from 400,000 to 575,000, and at the zenith of the membership explosion (1985-90) Greenpeace (USA) grew from 800,000 to 2.35 million. In 1992, the total membership of UK environmental groups was estimated at 5 million, or 9 per cent of the population (Ref. 1.66, page 12).

FoE perhaps reflected this shift more than any other. Founded in the USA in 1969 to wage political battles to protect the environment, it became an international organisation in 1971. Its campaigning strategy included seeking the prevention rather than the cure for

environmental problems; attacking specific issues; to build a strong full-time staff; and to argue from information rather than ideals. In 1971 FoE in London had 6 full-time staff, an annual income of £10,000 and 1,000 registered supporters, with the result that most of its income was spent on staff costs and publications. By 1994, FoE had 96 staff, an annual income of £5.3 million, and 112,000 supporters. Membership and trading accounted for approximately 65 per cent of FoE's income with the remaining 35 per cent coming from large donations and campaign appeals. In addition, several local FoE groups raised sums of money for their own work. In 1994 there were over 300 local FoE groups in the UK. Many of these were small, but a few were quite large. For example, Birmingham FoE employed 30 people and had a budget of over £150,000 a year (Ref. 1.66, pages 37-40).

FoE had campaigned extensively on transport issues, but a significant group specific to the sector was Transport 2000. Founded in 1972, this represented a novel alliance of rail unions and British Rail, and a wide range of environmental groups, including FoE, the Council for the Protection of Rural England, the Civic Trust and the National Trust. The combination of these interests enabled Transport 2000 to campaign both for transport solutions based on public transport and also for reducing pollution, saving energy and reducing the numbers of road accidents (Ref. 1.3, page 122).

Both FoE and Transport 2000 have remained highly prominent campaigning groups that are active on a wide range of transport issues, and in the 1970s they heralded a fresh approach to environmental issues.

## **6.2 New dimensions to environmental campaigning**

As seen in Section One, in the late 1960s and early 1970s there was a growing awareness of the environmental implications of the urban motorway programme, particularly with regard to the plan for a London 'Motorway Box'. However, even by this time, opposition generally focused on the characteristics of a particular scheme, rather than the principles underlying the road building programme as a whole.

It was only in the mid 1970s that campaigning took on the characteristic of querying the whole *raison d'être* of the inter-urban motorway programme. Perhaps surprisingly here, it was not the new campaigning groups who took the lead, but a particularly zealous and determined individual. John Tyme therefore made it his mission in life to undermine and eventually destroy the road building programme that had maintained its momentum for nearly twenty years. There were no half measures for Tyme, who believed that the motorway/trunk road programme, with all its ramifications, posed a consummate evil, and constituted the greatest threat to the interests of the nation in all its history (Ref. 1.69, page 1).

Notwithstanding his radical stance, Tyme proved himself to be an instinctively shrewd political campaigner, who understood that by disrupting a number of highway inquiries he could alarm Ministers into initiating policy change. Tyme therefore attacked not only the principles of cost-benefit analysis methods that appraised the merits of each new major road scheme, but also the human cost of motoring in terms of road accidents and those living near to a road.

In reality, of course, statistics are invariably open to interpretation. For example, on the question of accidents, although of course each casualty represents a human tragedy, the last thirty years has seen a steady improvement. Thus the peak year for those killed on the roads was 1965 when 7,985 lost their lives (see Chart 47). However, in terms of casualty rate per 100 million vehicle kilometres, the peak had arrived as early as 1957 with the figure at 284 (see Chart 48). By 1975, this figure had more than halved and stood at 138 (by 2006 the casualty rate per 100 million vehicle kilometres had fallen again to 51) (Ref. 1.2, Table 8.1).

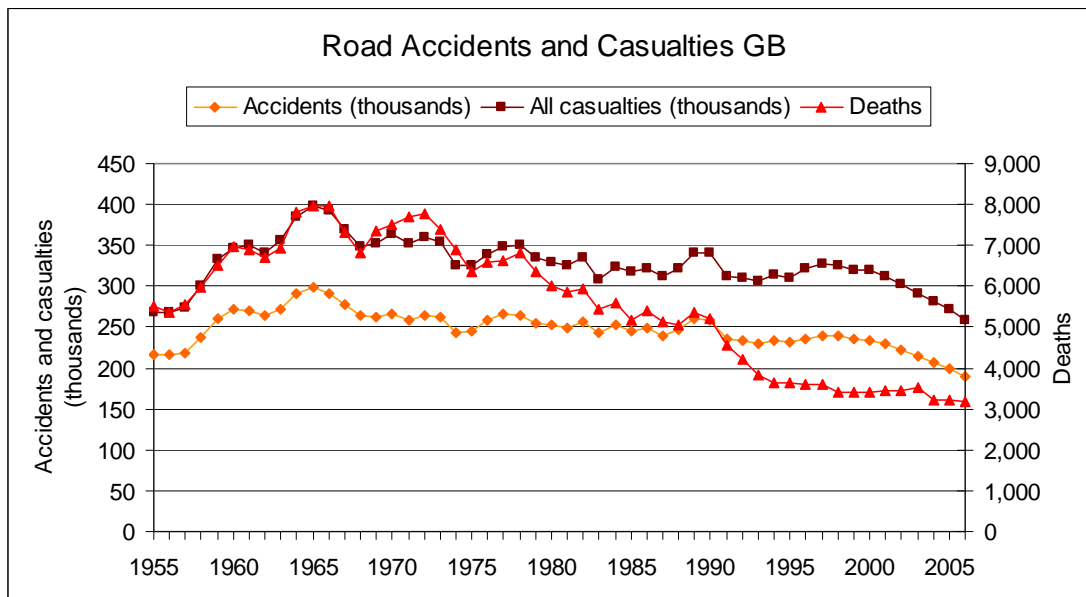


Chart 47. "Road accidents and casualties"  
 (source: TSGB series, specifically Ref. 1.2, Table 8.1)

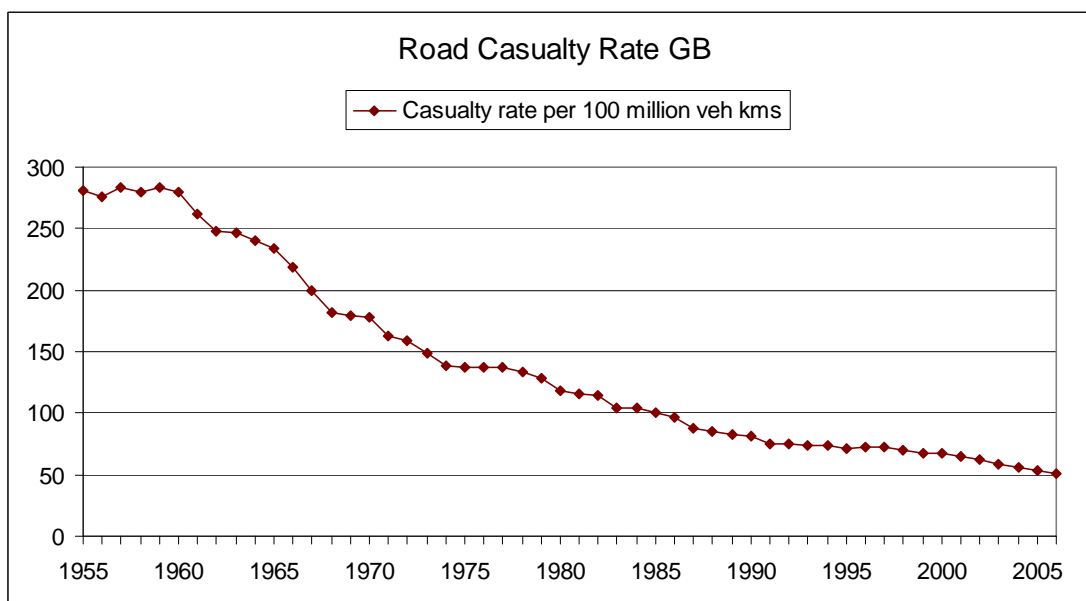


Chart 48. "Road casualty rate"  
 (source: TSGB series, specifically Ref. 1.2, Table 8.1)

Nevertheless, for a couple of years John Tyme successfully toured the country organising local protestors in order to systematically disrupt highway inquiries. This campaigning contributed to a major policy shift by the government in its 1977 Transport White Paper that abandoned the strategic roads network strategy that had dominated since the late 1950s in favour of a more flexible case by case approach (Ref. 1.9, paras. 248-9).

In the late 1970s, Tyme suddenly decided to retire from the fray, and in the 1980s environmental transport campaigning tended to become more spasmodic and low key. From the early 1990s, however, particularly in response to the large-scale road building programme set out in *Roads for Prosperity*, environmental campaigning achieved new levels of intensity. As in the 1970s, the original impetus for this protest came in a local context when people opposed to the driving of the M3 through the chalk downland of Twyford Down in

Hampshire held a mass trespass of the construction site in 1993. Subsequently, seven of the protesters were jailed for 28 days.

Although the road was built, the Twyford Down protest had several significant long-term consequences. In particular, it was instrumental in the setting up of Road Alert!, a group which coordinated direct action protests on road construction sites. Another influential group of this period was Alarm UK, which provided a do-it-yourself pack to local anti-road groups. It was also highly significant that as the direct action protests gathered momentum in the mid 1990s, so groups such as FoE and Transport 2000 came to play a far greater role in orchestrating the activity. In particular, the aim was to create the perception that 'Middle England' was in revolt against the *Roads for Prosperity* programme.

This type of campaigning probably achieved its peak in protests against the construction of the Newbury bypass in 1996. Here, FoE acted as a bridge between the direct action movement and the environmental 'Establishment' groups, while also having the necessary expertise and resources in dealing with the media to help convey the desired messages from the campaign. Unlike the 1970s, therefore, there was a much greater emphasis on organised and coordinated campaigning that drew on the full material and knowledge resources of the environmental movement (Ref. 1.3, pages 162-96).

The size and intensity of this campaigning caught the road lobby unprepared and on the defensive, and resulted in considerably reduced investment in the roads programme (see Chart 9). However, although the chief public attention was focused on roads protests, it should also be noted that environmental protests in the area of transport were by no means confined to roads policy. For example, the high speed Channel Tunnel Rail Link through Kent also attracted significant protests from those concerned at its environmental impacts on local communities. Similarly, the construction of a second runway at Manchester Airport and the Terminal Five development at Heathrow airport also attracted considerable opposition, including direct action protests in the case of Manchester (Ref. 1.70). This is a reminder that large-scale expansion of transport infrastructure generally is never likely to be costless in environmental terms.

### **6.3 Modern environmental complexities**

The Twenty First Century has seen a further shift in the structure and character of environmental campaigning. In particular, the issues themselves have tended to become more central to the policy process. This is particularly the case for transport air pollutants. The government has Public Service Agreement (PSA) targets to reduce various pollutants, including carbon dioxide (the principal greenhouse gas) and seven toxic local air pollutants.

Local air pollutants produced by transport have seen substantial decreases since about 1990. This has been aided by the introduction of lead-free petrol, catalytic converters and tougher emissions standards for new vehicles. The two pollutants that are still considered to present a threat to local air quality are nitrogen dioxide and particulates (PM<sub>10</sub>). It can be seen from Chart 49 that emissions of both of these have decreased substantially between 1995 and 2005, while during the same period emissions of carbon dioxide have increased (although at a lower rate than traffic).

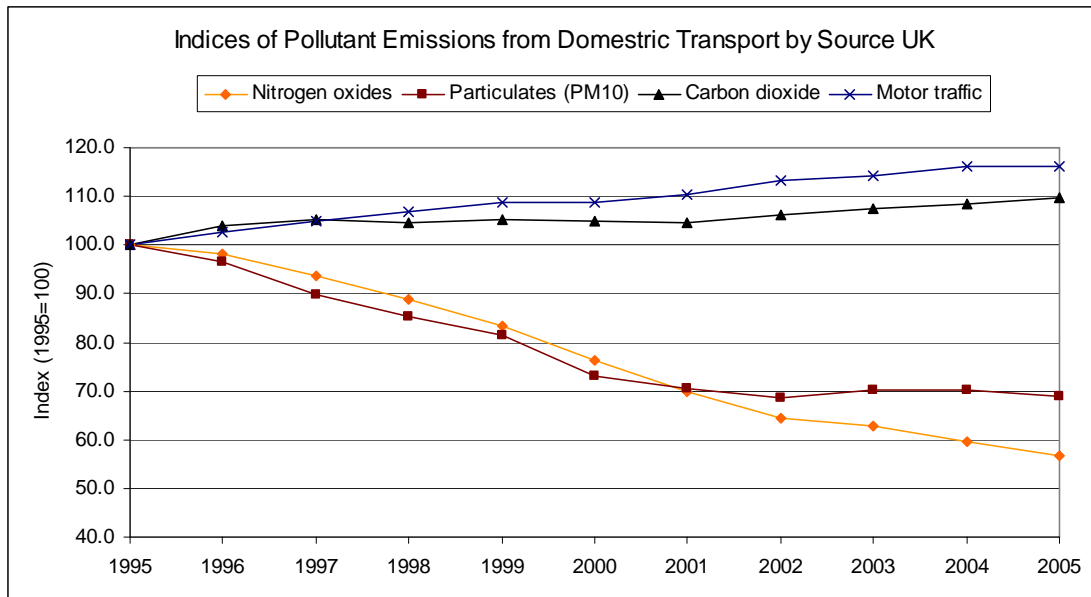


Chart 49. “Indices of pollutant emissions from domestic transport by source”  
(source: Ref. 1.2, Tables 3.8 and 3.9)

The potential threat of global warming, particularly through carbon dioxide (CO<sub>2</sub>) emissions, is something that governments cannot ignore, regardless of public debate about the nature and magnitude of the threat. The 1997 Kyoto Protocol (part of the United Nations Framework on Climate Change) set a UK target of a 12.5 per cent reduction in greenhouse gas emissions from 1990 levels by 2008-12. The British government itself set a more ambitious domestic goal of reducing carbon dioxide emissions by 20 per cent by 2010. In the event, although the Kyoto target is on course to be met, the government itself has conceded that its own 2010 target is unlikely to be fulfilled.

Nevertheless, this did not deter the government from introducing a Climate Change Bill in 2007. This proposes legally binding limits for the UK to reduce carbon dioxide emissions by 60 per cent by 2050 with an interim target of a cut of at least 26 per cent by 2020. Governments will therefore be required to set five year ‘carbon budgets’ stipulating maximum emissions with tax charges, regulations and ‘cap and trade’ mechanisms to achieve the desired cuts. In this context, the transport sector, including aviation, produces about one quarter of the UK’s total carbon emissions and this share has been increasing and is expected to continue to increase (see Charts 50 and 51). Road transport contributes 85 per cent of this, with passenger cars accounting for around half of all carbon emitted by the transport sector (Ref. 1.71 page 63). The government has a Powering Future Vehicles Strategy, designed to provide a framework aimed at promoting the development, introduction, and take-up of low carbon vehicles and fuels (Ref. 1.72).

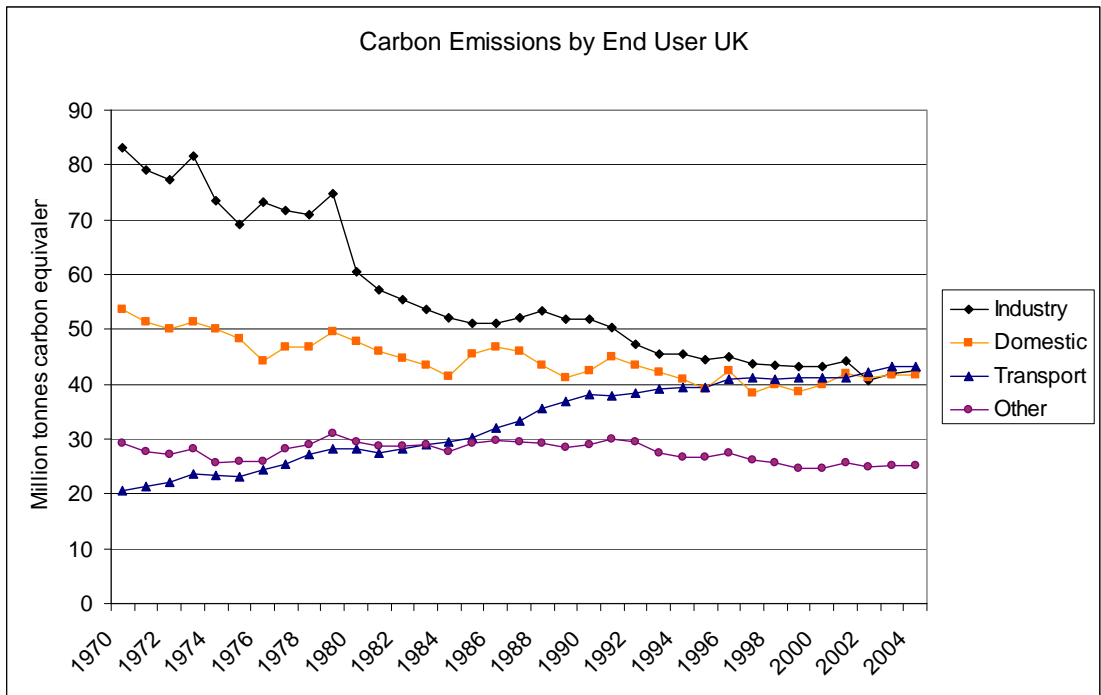


Chart 50. "Carbon emissions by end user"  
(source: Ref. 1.66, Figure 11.4)

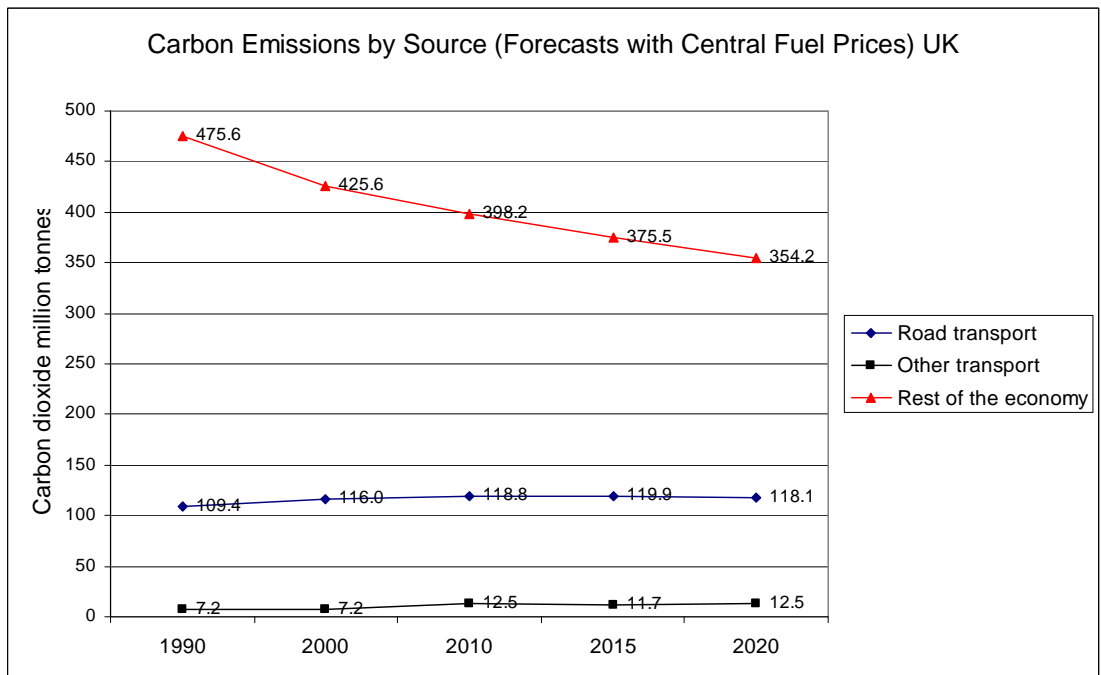


Chart 51. "Carbon emissions by source forecasts"  
(source: Ref. 1.2, Table 3.7)

Public surveys between 2006 and 2008 have shown that a rather stable 80 per cent of adults said they were very or fairly concerned about climate change, with about a quarter being very concerned (Ref. 1.34, page 81). This was identified as being in the 'top three policy issues facing Britain' by 23 per cent in August 2006, by 32 per cent in August 2007 and by 29 per cent in February 2008.

A climate change study for DfT found that when members of public are asked whether particular behaviours would reduce global warming, switching to more fuel-efficient cars was

identified as helping a lot by 62 per cent and switching from cars to other form of transport by 46 per cent (Ref. 1.34, pages 82-3). However, only 12 per cent said that *'I am very concerned about protecting the environment and do everything I can to help'*. 25 per cent said that *'I am very concerned about protecting the environment, but know there is more I can do to help'*. 47 per cent said *'I am quite concerned about the environment and try to take environmentally friendly actions when I can'* and 12 per cent said *'I realise that protecting the environment is important but do not feel that there is much I can do about it'*.

Matters with regard to the demand management of traffic, although still controversial, are also a part of mainstream politics to a considerably higher degree than in earlier decades. In particular, in the wake of the successful introduction of the London Congestion Charge in 2003, the government has at least a long-term intention to introduce a national system of road pricing. Reflecting these shifts, there has tended to be a trend for environmental campaigning on transport to become more focused on achieving 'insider' status with government, by becoming more established in consultative and official committees in order to have a direct impact on decision-making.

This does not mean, of course, that the direct action campaigns favoured in the 1990s will not recur. For example, during 2007 a Climate Camp was set up outside Heathrow Airport in order to protest against proposals to build a third runway at Heathrow and also to highlight generally the impact of aviation on the environment.

Nevertheless, the modern complexities of environmental issues, often requiring detailed expertise and technical knowledge, tend to lend themselves to a different style of campaigning. A particularly good example here is provided by the group Roadblock, founded in 2005 by several of the people prominently involved in the direct action protests of the 1990s. However, Roadblock did not find it so easy to make this type of impact in modern times, and in 2007 merged with Transport 2000. In turn, Transport 2000 changed its name to the Campaign for Better Transport. This change in title in itself suggests a switch in emphasis from a type of transport vision, to aims based more on finding practical solutions for accommodating the car, but in a more environmentally friendly way.

## 7. Lifestyles

### 7.1 Growth in incomes and expenditure on motoring

The evolution of transport and travel over the past fifty years to some extent reflects demographic and economic changes in Britain. Changes since 1971 in key demographic, economic and transport indicators are summarised in Table 4 (this is only able to be shown from 1971, since comparable data prior to this is unavailable for some of the indicators).

The number of people living and working in Great Britain has grown slowly during this period with the number of households increasing at a slightly higher rate. Economic activity per person has doubled during the period and incomes grown even more than this. The length of motorways has increased by 2.8 times over the 35 year period, although most of this growth took place in the first 20 years. The number of registered cars has grown by a similar amount, but grown more steadily during the period. Total travel has nearly doubled since 1971 with car travel growing slightly more than this. Motor traffic has grown at a slightly higher rate than car travel, as fewer journeys are made as a car passenger. The 1980s featured by far the highest rate of growth in car travel and motor traffic.

Table 4. “Demographic, economic and transport and travel indices (1971=100)”  
(sources: Ref. 1.2 and Ref. 1.67)

Year	1971	1981	1991	2001	2006
Socio-economic indicators					
Population	100	101	103	106	108
Households	100	109	120	128	130
Employed UK	100	100	107	113	117
GDP/head UK	100	116	147	189	204
Disposable income/head UK	100	128	173	223	237
Transport and travel indicators					
Motorway length	100	208	244	274	280
Licensed cars	100	142	189	229	254
Total travel (person kms)	100	118	162	183	194
Car travel (person kms)	100	126	186	209	219
Motor traffic (veh kms)	100	131	194	224	239

The growth in wealth and travel that has taken place is manifested in broader changes in patterns of living. The RAC Foundation Report *Motoring Towards 2050* concisely describes these momentous shifts:

*“The UK industrial and employment base has changed. Population and employment have been decentralised from city centres to suburbs and villages, as people have looked for lower-density housing and a better style of life. Factories and mines, which traditionally relied on local workers walking or taking public transport to work, have closed. Cars mean people no longer need to live close to their work or on a public transport route. Catchment areas for jobs are wider and hours of work more varied since workers are not tied to public transport schedules.”* (Ref. 1.74, page 12)

*Motoring Towards 2050* also highlights particularly profound gender and age changes. For example, car ownership has helped expand the employment choices of women, with their range of jobs far more extensive than fifty years ago. In this context, it is pointed out that the number of women holding driving licences has increased by 135 per cent over the previous 25 years, compared with a 36 per cent rise for men. People over 60 years of age with full driving licences has more than doubled over the same period (Ref. 1.74, page 12).

The increasing importance that people attach to mobility is indicated by the fact that the proportion of household expenditure on transport (motoring and fares) rose from 8 per cent in 1957 to 16 per cent in 2006 (Ref. 1.75, page 4). While transport has increased in proportion of expenditure from since 1957, food and drink has decreased from 33 per cent to 15 per cent. Spending on leisure goods and services has increased in share from 10 per cent to 19 per cent during this period.

In 2005/06 the average household spent £74.90 on transport and travel per week, including £23.90 on vehicle purchase, £11.60 on vehicle insurance and taxation, £8.00 on spares, accessories, repairs and servicing, £17.50 on fuel and oils and £9.90 on other transport (including fares) (Ref. 1.2, Table 1.13). For the lowest income decile transport comprises 11 per cent of expenditure, while for the highest income quintile it is 16 per cent (Ref. 1.75, page 35).

## **7.2 The information age**

The information age provides new opportunities for communication and accessing services without mobility. Between 1996/97 and 2005/06 the proportion of homes owning a mobile phone increased more than four-fold from 17 per cent to 79 per cent and owning a computer increased from 27 per cent to 65 per cent. Between 1998/99 and 2005/06 the proportion of homes with internet access increased over five-fold from 10 per cent to 55 per cent (Ref. 1.73, pages 172-3). In 2007 it is estimated that in Great Britain 61 per cent of households have internet access and of these 84 per cent have a broadband connection (Ref. 1.76, page 1).

A survey in 2006 on use of the internet for shopping revealed 51 per cent of adults had bought or ordered travel, accommodation or holidays on-line in last year, 42 per cent had bought a film, video or DVD, 37 per cent had bought clothes or sports goods and 20 per cent had bought groceries (Ref. 1.73, Figure 13.5). This suggests that the internet is better serving leisure and entertainment consumption than that of everyday necessities. Nevertheless, the RAC *Motoring Towards 2050* Report estimates that 15 per cent of grocery sales could be made on-line by 2010, although it is pointed out that road congestion will only be reduced if the mileage saved by individuals is more than the mileage run by the home delivery services, and that information from the internet does not stimulate extra journeys (Ref. 1.74, page 82).

Large differences in home access to computers and the internet are found according to income (Ref. 1.77, page 2). In 2005/06, 95 per cent of households in the highest income decile group owned a home computer and 93 per cent had an internet connection. In contrast, in the lowest income decile group, only 29 per cent of households owned a computer and 17 per cent had an internet connection. These trends are reinforced by the figures for television. 81 per cent of households in the highest income decile group had a digital, satellite or cable receiver, but only 43 per cent in the lowest income decile group. These statistics suggest something of a paradox, in which those with the greatest resources to travel are also those with the greatest opportunity to access services and entertainment at home.

## **7.3 Living without a car**

It has been seen in Section 2 that 25 per cent of British households do not have access to a car in 2006 and that the figure is 51 per cent for the lowest income quintile. Even in households with access to a car there will be adults who are unable to drive. Chart 52 shows that adults in many single person households and lone parent households do not have a car and that in other (multiple adult) household types there are non-drivers. Across all adults, 13 per cent are in households with a car but do not drive. Chart 53 shows the much larger distances travelled per year by adults in households with car, although it is notable that distance driven by adults in households with cars has decreased slightly in the last 15 years. This could be due to the

lower income households that have acquired cars in recent years not having the resources to travel large distances by car.

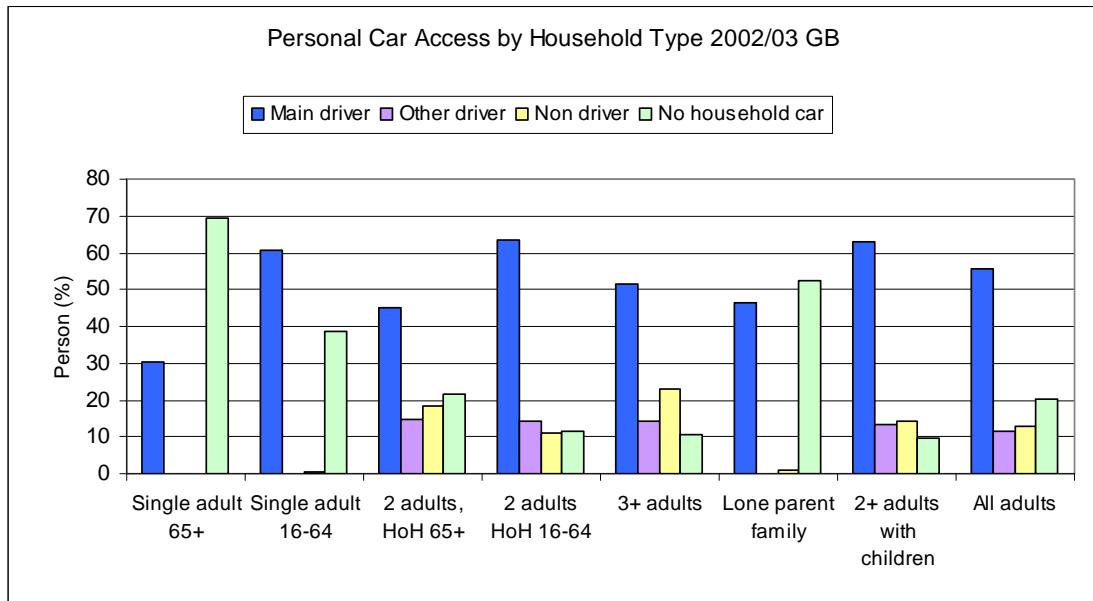


Chart 52. "Personal car access by household type 2002/03"  
(source: Ref. 1.78, Table 5.2)

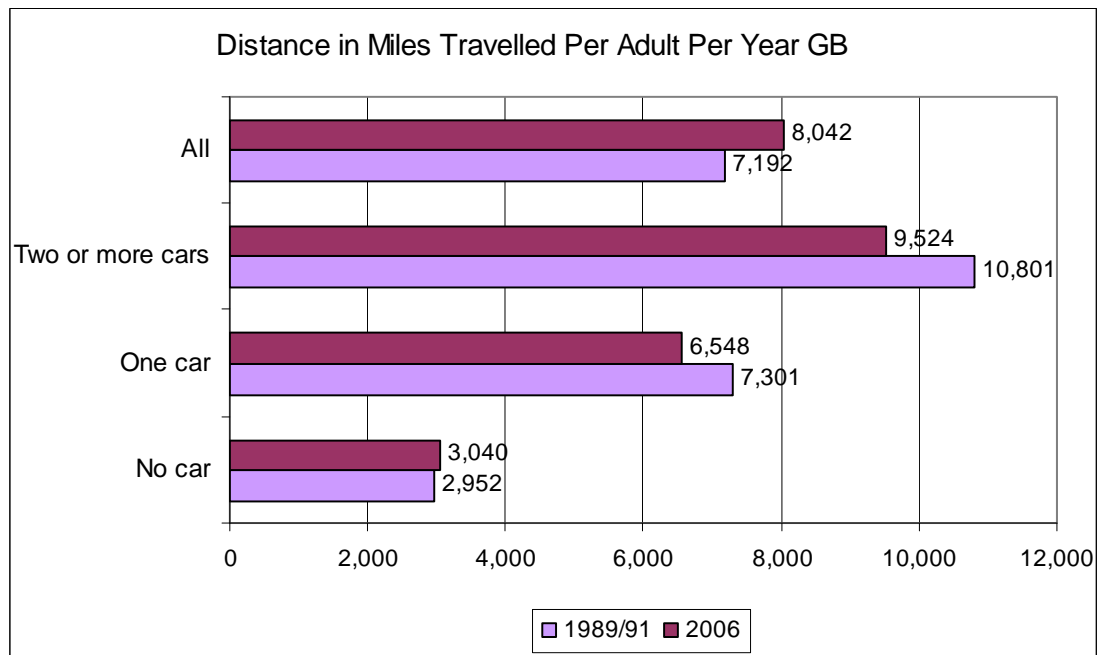


Chart 53. "Distance travelled per adult per year"  
(source: NTS series, including Ref. 1.31, Table 5.1)

The convenience of car ownership provides people with the mobility to do far more things in their day, whether work, family, business or entertainment. On the other hand, where they need to go has become more dispersed and this presents difficulties for those without access to a car:

*“Hospitals have been rationalised into fewer, larger units serving wide areas. Shopping centres and leisure complexes are now often on main roads out of town with large free car parks. From safety, convenience or educational choice, children commonly go to school by car.” (Ref. 1.74, page 13)*

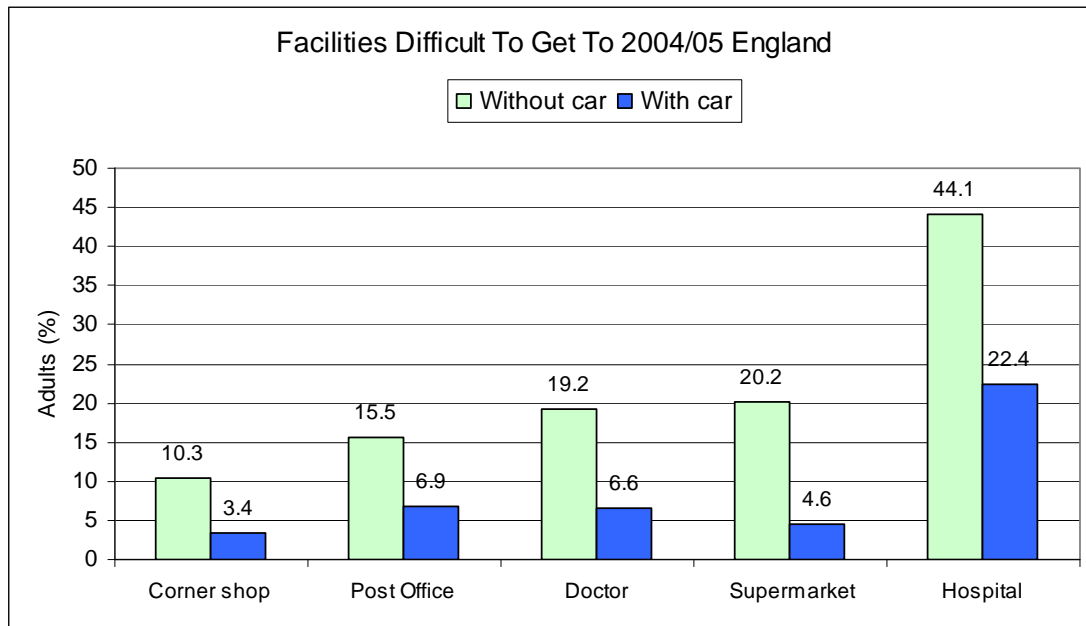


Chart 54. “Facilities difficult to get to 2004/05”  
(source: Ref. 1.79, Trends 4.11a and 4.11b)

Recognising the problems of those without access to a car, the government introduced the Accessibility Planning process in 2004 (Ref. 1.80), which is intended to focus on improving access to the destinations that are most important to people’s life opportunities (identified as work, healthcare facilities, education and food shops). It is a systematic process for identifying and tackling the accessibility problems experienced by those in disadvantaged groups and areas and is required to be carried out by local transport authorities in conjunction with relevant partners.

#### 7.4 More discretion, less obligation

Examining the purposes of travel and how these have changed over the last twenty years (data is unavailable before that) shows that the average number of trips for commuting, education and visiting friends has decreased, whilst trips for escort education, shopping, other personal and escort and other leisure have increased (see Chart 55). There is an indication of fewer mandatory trips and more discretionary trips associated with leisure. When examining average distance travelled there is less change in the distribution of travel by purpose over time (see Chart 56). This indicates for those purposes where trips have decreased (commuting, education, visiting friends) the length of trip has increased. The opposite is the case for those purposes where trips have increased.

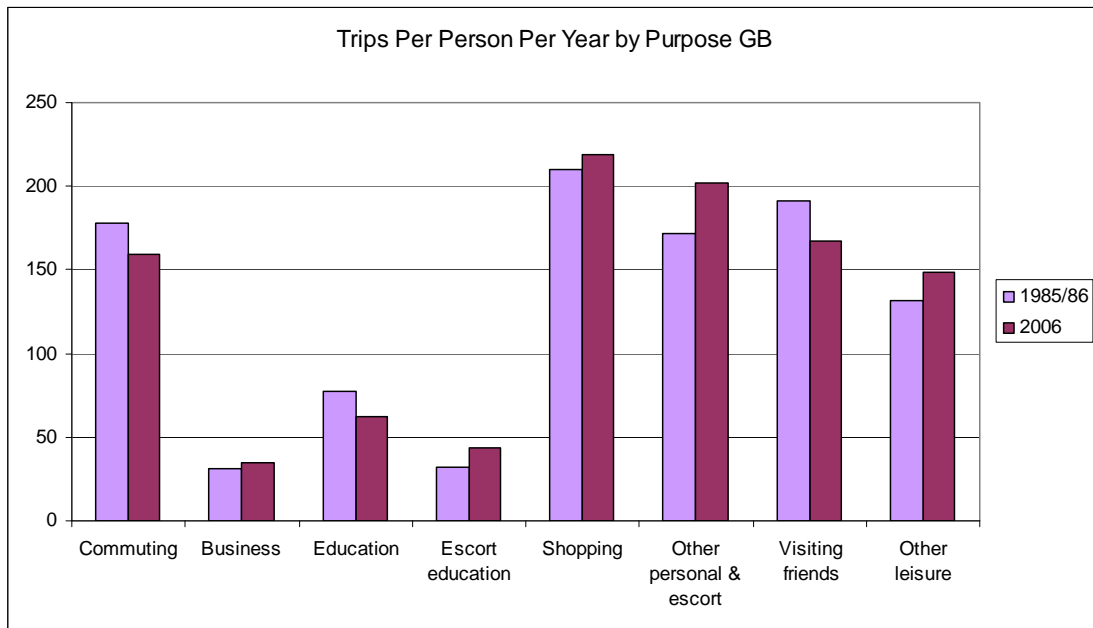


Chart 55. “Trips per person per year by purpose”  
(source: NTS series, specifically Ref. 1.31, Trend 4.1)

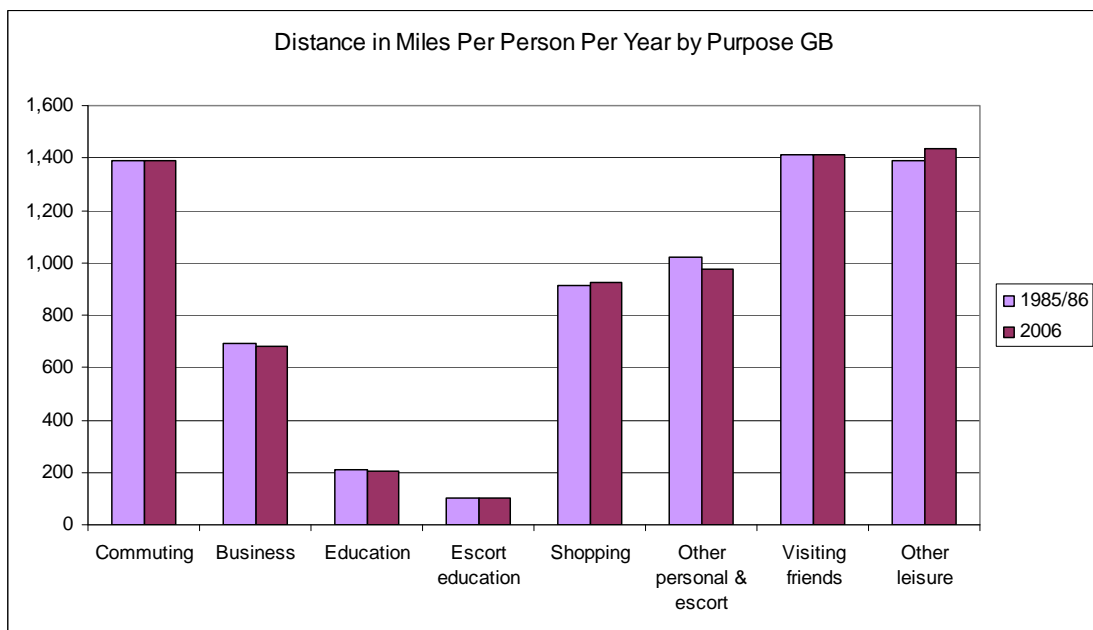


Chart 56. “Distance per person per year by purpose”  
(source: NTS series, specifically Ref. 1.31, Trend 4.1)

It has been seen that commute trips have decreased in last twenty years. This is despite more people entering the workforce. Explanations for fewer commute journeys are that more people are working at home, part-time or flexibly over fewer days and that more workers are entitled to paid leave (Ref. 1.78, pages 29-30). Results from the Labour Force Survey suggest that the numbers of people ‘mainly’ working from home increased from 1.5 per cent in 1981 to 2.7 per cent (or 749,000 people) in 2006 (Ref 1.81). Those working at least one day per week at or from home increased from 11.3 per cent in 1997 to 14.9 per cent (or 4,201,000) in 2006.

In 2006 the car was the main mode used by 70 per cent of those people commuting to work and this has increased from 68 per cent in 1995 (see Chart 57). While the number of

commute trips has been decreasing, the average distance travelled to work has been steadily increasing (see Chart 58). It has increased from 6.1 miles one-way in 1985/86 (Ref. 1.39, Table 4.1) to 8.7 miles one-way in 2006 (Ref. 1.31, Table 4.2). It is estimated that it was less than 2.5 miles in 1890 (Ref. 1.82). At the same time as the average length of the one-way journey to work has increased, between 1994 and 2004 the one-way mean commute time has increased from 24 minutes in 1995 (Ref. 1.83, Table 1.25b) to 26 minutes in 2006 (Ref. 1.2, Table 1.9).

This trend shows how people are living further from their workplaces. Access to a car and provision of a good road network facilitate this. Instead of being constrained to live near to the workplace(s), households can elect to choose somewhere more desirable (for example, in terms of the cost and quality of housing, the quality of neighbourhood and schools, the absence of crime and access to family and friends). Another explanation put forward for this trend is that flexible working practices mean fewer journeys to work need to be made and hence a longer commute is acceptable for those days when it needs to be made. Also with dual earner households a compromise will often have to be made by at least one of the workers regarding proximity to their workplace.

The Report on *Motoring Towards 2050* estimates that there will be another 10 per cent of car commuting workers involved in some sort of teleworking by 2015. Of this 10 per cent, 2 per cent could be full-time, 4 per cent part-time, and the balance quarter time. As it is the longer journeys that are likely to be affected disproportionately, then road traffic would be 6 per cent lower than otherwise. This would result in there being about 100 kilometres less per year per person, or 6 billion vehicle kilometres per year (Ref 1.74 page 81).

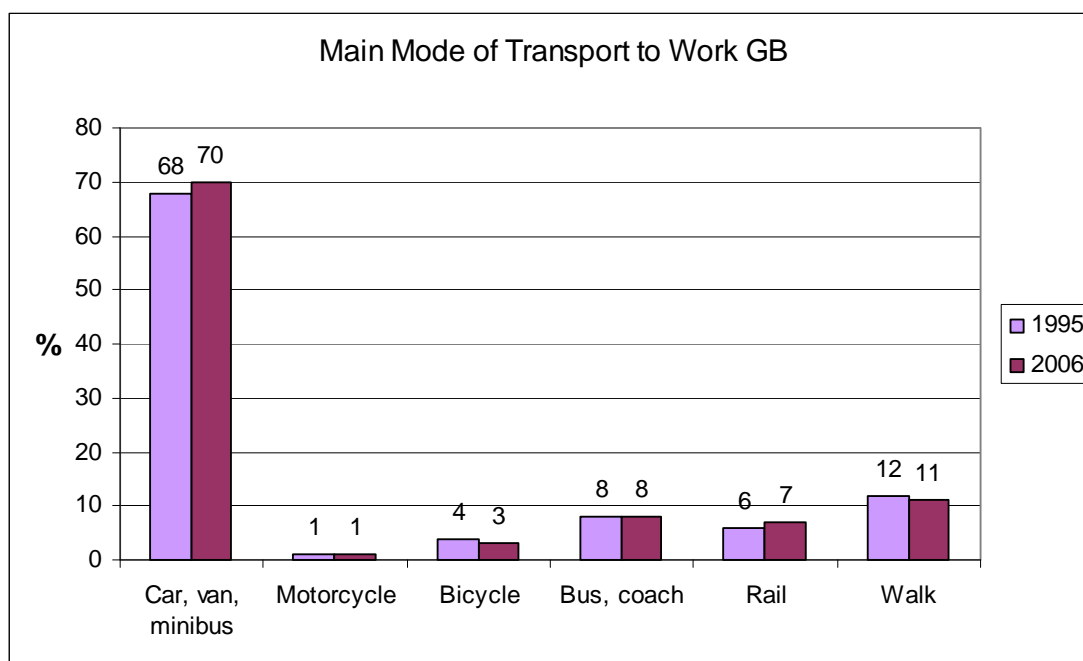


Chart 57. "Main mode of transport to work from Labour Force Survey"  
(source: TSGB series, including Ref. 1.2, Table 1.8)

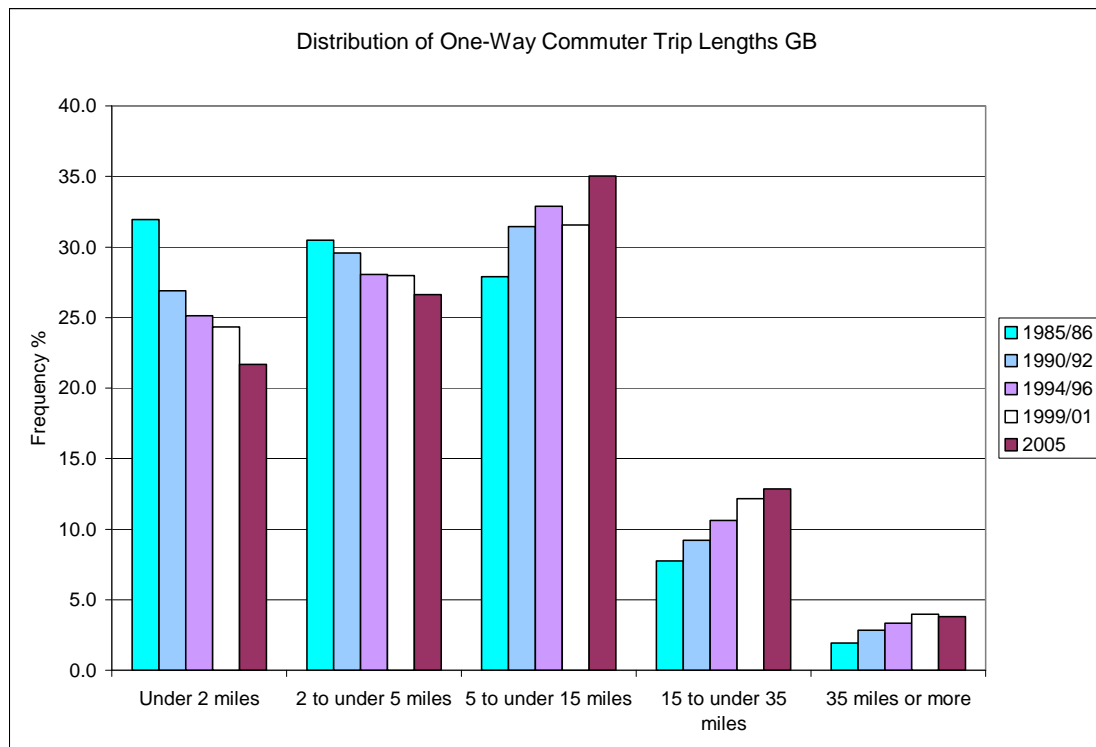


Chart 58. "Distribution of one-way commuter trip lengths"  
(source: NTS series, chart obtained from Ref. 1.84)

The average number of shopping trips has increased slightly in the last twenty years (Chart 55), but distance travelled has changed little (Chart 56). In 2005, in 76 per cent of households the person who does the main food shop said that the car is usually used (Ref. 1.85). 56 per cent of car users said it would be difficult without the car with 80 per cent referred to difficulties carrying shopping. The trip to the large supermarket has become firmly established as a standard use of the car and appears to be one which it will be difficult to reduce reliance on the car.

### 7.5 A stable feature of travel in the last fifty years

It is difficult to identify any characteristic of travel in Great Britain that is similar now to fifty years ago, but evidence from the National Travel Survey indicates that there are two. The average number of trips each individual made per year was 956 in 1972/73 (the earliest date for which this information is available) and was 1037 in 2006. The average time each individual spent travelling per year was 353 hours in 1972/73 and 383 hours in 2006. This represents three one-way trips and one hour of travel per person per day. The increased opportunities to cover larger distances in the same time (through use of a car) have meant that average distances travelled have grown (by about 60 per cent between 1972/73 and 2006). Chart 63 shows these trends through indices (1972/73=100).

It has been argued that there is a constant travel time budget – an amount of time each day that people on average are prepared to devote to travel. Spending longer than this removes the opportunity to engage in other activities. Spending less than this fails to satisfy the inherent urge for mobility. This travel time budget may vary according to individuals in the population but on average it is about one hour. It has been put forward that technological developments which assist individuals in carrying out useful activities while travelling could result in people being prepared to devote more time to travel. For example, if work can be conducted while commuting by rail then more time could be invested in travel after work in the evening.

If the constant travel time budget argument is accepted, however, it is possible to draw out some policy implications. In the past, policies and schemes that have enabled faster travel (through high speed road and rail systems, for example) have had the consequence of increasing distances travelled. The corollary is that policies and schemes that promote the take up of slower travel modes (through improved local street environment, for example) will decrease distances travelled. If this were considered an appropriate ambition, the challenge would be to ensure that in achieving this people do not suffer reduced quality of access to jobs, amenities, friends and family and leisure.

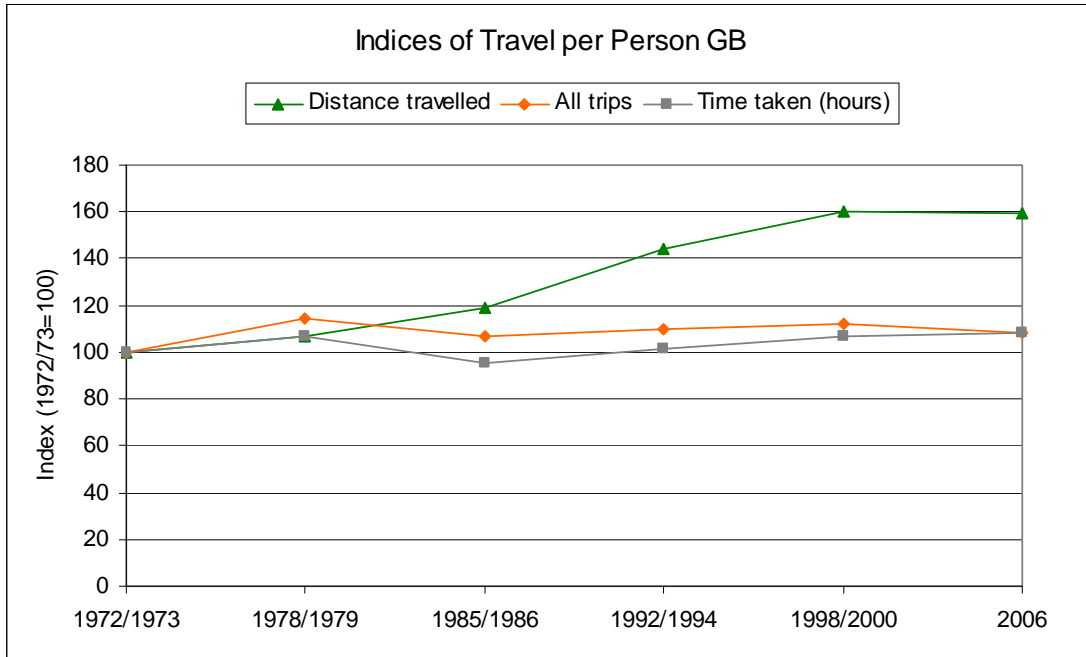


Chart 59. "Indices of travel per person"  
 (source: NTS series, specifically Ref. 1.31, Table 2.1)

## **8. International contrasts and possible turning point**

### **8.1 International contrasts**

After reviewing transport and travel in Great Britain in the last fifty years an interesting question, looking to the future, is whether citizens travel very differently in other similar countries. Charts 60 to 66 compare the travel of British citizens with those of France, Germany, Italy, the Netherlands and Spain.

Charts 60 to 62 present passenger travel kilometres from 1970 to 2006 for each country for three different categories of transport: (i) car; (ii) bus and local transit; and (iii) national rail. From this data modal split comparisons are made for 2006 in Chart 63. This shows Britain has the highest car mode share with 86.6 per cent, but the range of variation is small with the lowest car mode share of 81.4 per cent for Spain. Of note is higher rail mode share in France, Germany and the Netherlands and higher bus and local transit mode share in Italy and Spain. It has been found that the cost of using public transport is higher in UK than other European countries and a higher proportion of public transport operating costs are captured from users in UK (Ref 1.86, para. 10.13). The lower public transport mode share in Great Britain may therefore not be seen as surprising.

Passenger travel per person per year in 2006 is calculated from the same data (and population figures) and presented in Chart 64. France and Italy have similar levels of car travel per person as Great Britain, but Germany, the Netherlands and Spain have lower levels. In Chart 65 passenger travel per person per year is calculated from similar data (it is for the year 2005 with tram and metro data excluded) and now including data for Japan and USA. This shows Japan has half the car travel per person as Great Britain and higher rail travel than any of the European countries. In contrast, the average American travels by car twice as much as the average Briton.

Finally, Chart 66 compares annual walking and cycling distances per person. Some caution needs to be exercised about this data which is not measured in a consistent way in different countries. What is shown though is that walking levels are similar between countries, but cycling in the Netherlands is far higher than Great Britain (by eleven times) and Germany (four times) and Italy (twice) also have higher levels of cycling.

An examination of trends in cycling in the Netherlands, Denmark and Germany shows that cycling levels in these countries declined sharply during the 1950s and 1960s as car ownership and use developed, but increased from about 1975 as policies were implemented to favour walking cycling and public transport over the private car (Ref 1.87). The key to success in achieving high cycling levels is considered to be coordinated implementation of pro-cycling measures (in particular, provision of separate cycling facilities along busy roads and at intersections and traffic calming in residential neighbourhoods) and restrictive policies on the car.

To further interpret the implications of the trend data shown in Charts 60 to 66 requires more detailed examination of the transport systems in the other countries. It is also clear that national aggregate data masks large variety in transport policies, conditions and behaviour at a more local level within countries. There could be much to be learnt from studying what individual regions, cities and towns have achieved within Great Britain and other countries. Some analysis of this kind has been conducted by the Commission for Integrated Transport and offers valuable insights for future transport planning in Great Britain (Ref. 1.86).

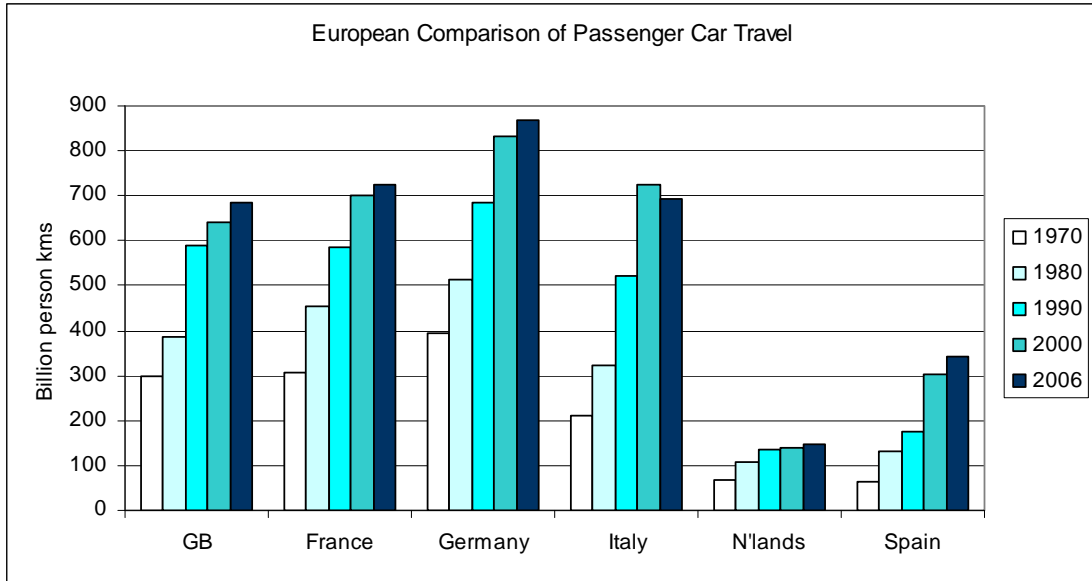


Chart 60. "European comparison of passenger car travel"  
(source: Ref. 1.88; page 122 )

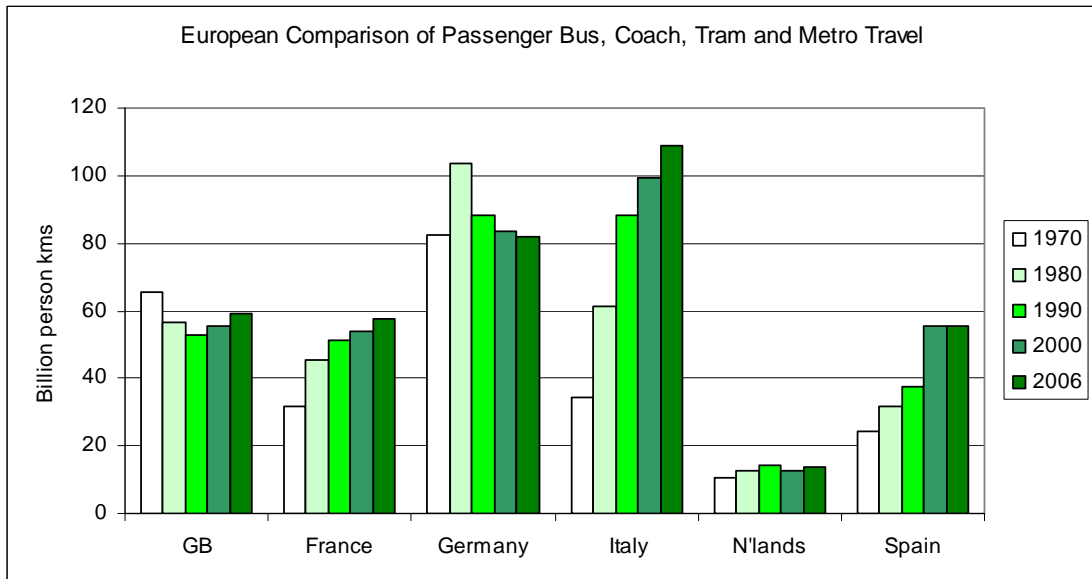


Chart 61. "European comparison of bus, coach, tram and metro travel"  
(source: Ref. 1.88; pages 123-4)

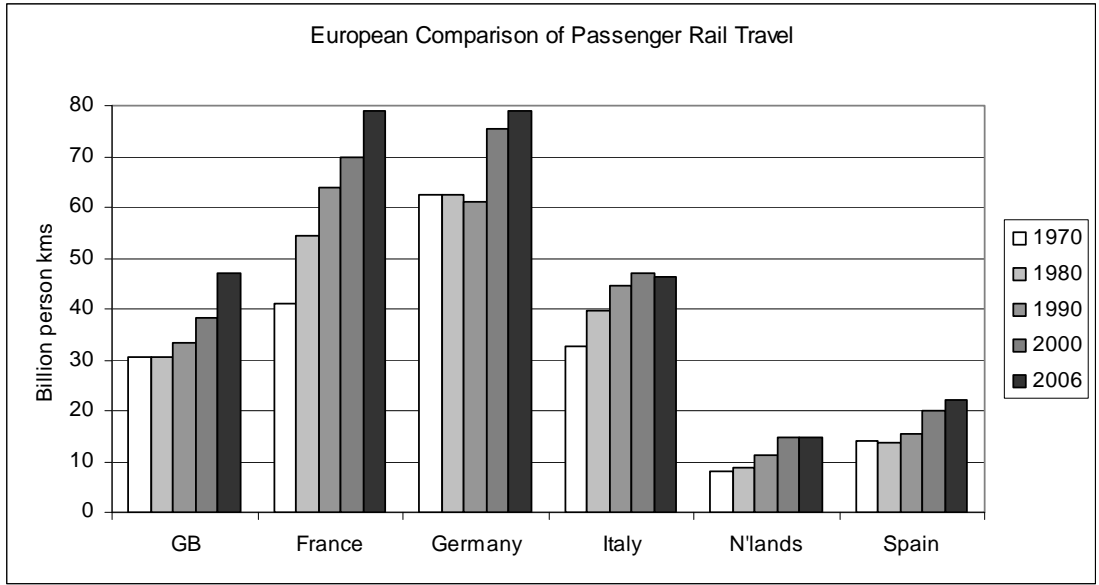


Chart 62. "European comparison of passenger rail travel"  
(source: Ref. 1.88; page 125 )

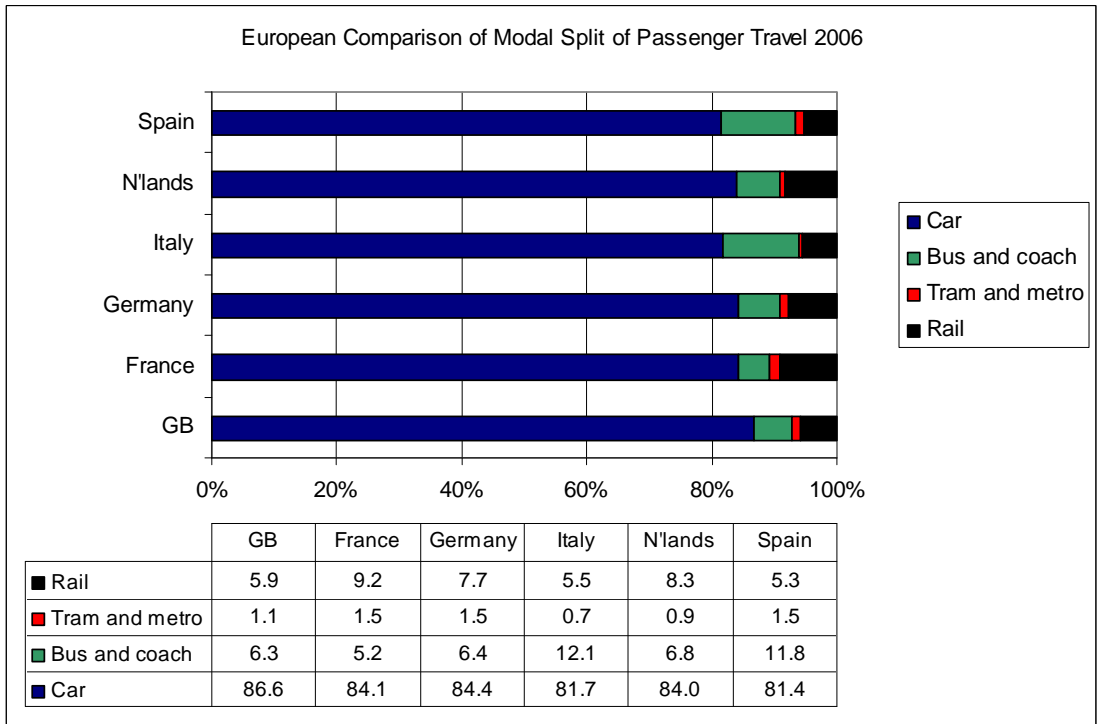


Chart 63. "European comparison of modal split of passenger travel 2006"  
(source: Ref. 1.88; pages 122-5 )

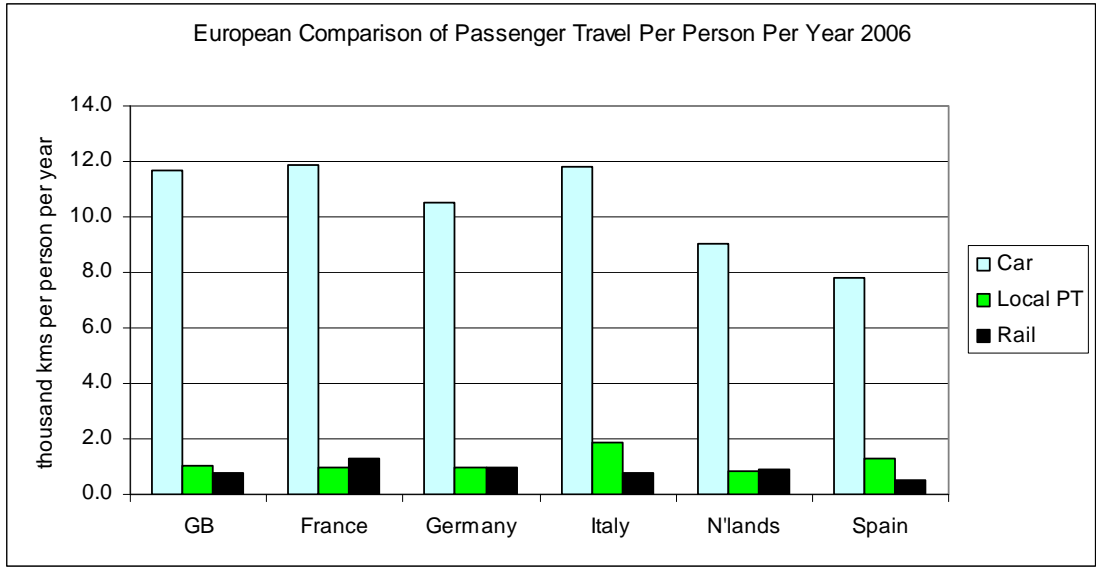


Chart 64. "European comparison of passenger travel per person per year 2006"  
 (sources: Ref 1.2, Table 10.1 and Ref. 1.88; pages 122-5)

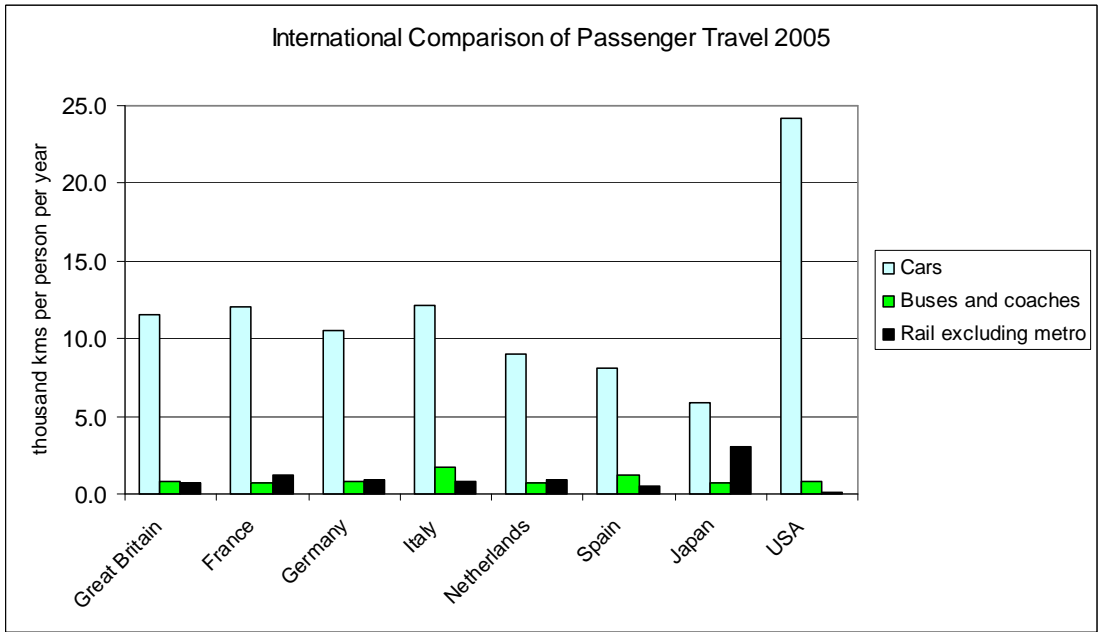


Chart 65. "International comparison of passenger travel 2005"  
 (source: Ref 1.2, Tables 10.1 and 10.6)

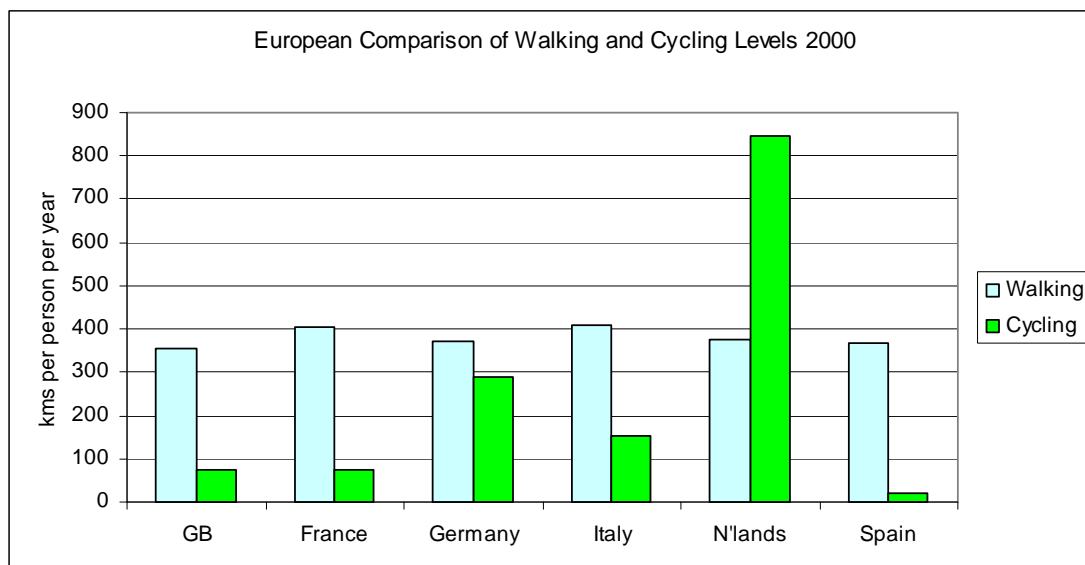


Chart 66. “European comparison of walking and cycling levels 2000”  
(source: Ref. 1.86, Figures 3.9 and 3.10)

## 8.2 Turning point?

After fifty years of strong growth in car travel in Great Britain since the Second World War, it has been seen that the distance travelled by car per person has stabilised over the last ten years (this is offset to some extent by recent increases in population which have resulted in overall car travel still increasing) (see Chart 20). It can be conceived that a turning point has been reached and we may now be about to see increasing use of alternatives to the car.

While stabilisation appears to have occurred in distance travelled by car at an individual level there is some indication that this has arisen from fewer trips but trips of longer distance. It appears destinations continue to be getting away from us.

For future travel it is not just a matter of physical locations and transport networks that have to be taken into account, but perceptions and attitudes can also be highly significant. Compared with fifty years ago, people now lead more varied lifestyles, with greater choice in shopping and leisure and even employment, education and health. These choices can widen mental horizons and so make distances travelled and time taken less significant. For example, in many cities, there is now an acceptance of a 24 hour society with an associated assumption that people will wish to be mobile potentially at all hours of the day.

There are of course also perceptions that can militate against mobility, such as fear of congestion, increasing financial costs, concerns about the environmental and public health effects of car travel and the desire to spend time in the local community. All these factors have the potential to reduce the direct link between personal aspirations and car ownership and use, a phenomenon that established itself so powerfully in the 1960s, and has remained the dominant mindset for nearly five decades. Car ownership may perhaps lose some of the novelty and even glamour it enjoyed in former years with the rise in rail travel indicating a long-term trend towards a greater willingness to use other modes. Nevertheless, the role of the car remains firmly embedded at the heart of society, and for the foreseeable future this central position appears unlikely to be significantly undermined.

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