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# Motorcycling in Great Britain

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## Key findings

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- The number of motorcycles licensed at the end of 1999 was 760 thousand, accounting for 3 per cent of all registered vehicles.
- Half of motorcycles licensed at the end of 1999 were of 500cc or over, compared with 15 per cent 10 years ago.
- Motorcycles accounted for less than 1 per cent of road traffic, but 16 per cent of deaths and serious injuries.
- The percentage of households with at least one motorcycle has halved between 1985/86 and 1997/99.
- The average length of a motorcycle trip was 9.3 miles in 1997/99, an increase of two-thirds from 1985/86.
- Commuting, business and education accounted for 57 per cent of motorcycle trips and 50 per cent of the distance travelled.
- Men were more likely to make a motorcycle trip, and made longer trips on average than women.

## Introduction

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This article collates the data available on motorcycling including trends in motorcycle use and ownership, characteristics of motorcycle use by different individuals and purpose, and motorcycle accidents. Only data up to 1999 were available for this article.

Unless otherwise stated in the article or notes 'motorcycles' includes scooters and mopeds.

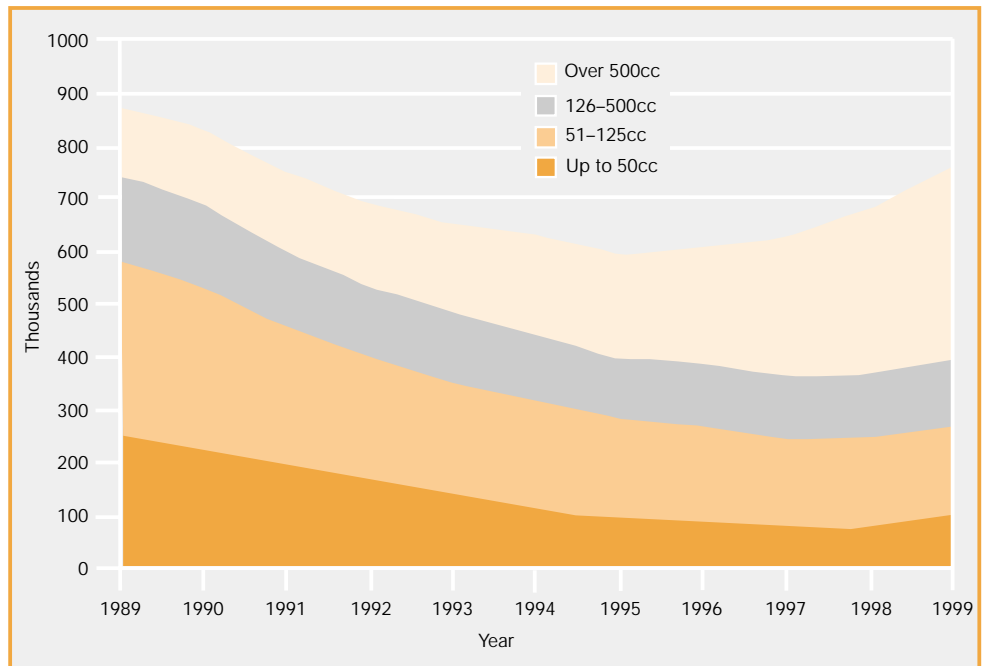
## Numbers of motorcycles licensed

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The number of motorcycles licensed by taxation group was 760 thousand at the end of 1999. This is below the 1960 peak of over 1.5 million. In 1960 motorcycles accounted for 19 per cent of all registered vehicles, but this had fallen to only 3 per cent by 1999.

Over the last 10 years there has been a change in the size of motorcycles licensed with nearly a half of those licensed at the end of 1999 of 500cc and over (371 thousand), compared with only 15 per cent (131 thousand) 10 years ago. This increase has occurred over the last 10 years, although mainly in the last 5 years, with a corresponding fall in the numbers of smaller motorcycles (under 125cc) from 67 per cent (583 thousand) to 35 per cent (265 thousand) of all motorcycles (*Chart E. 1*).

Chart E.1 Motorcycles licensed at end of year by engine size: 1989–1999



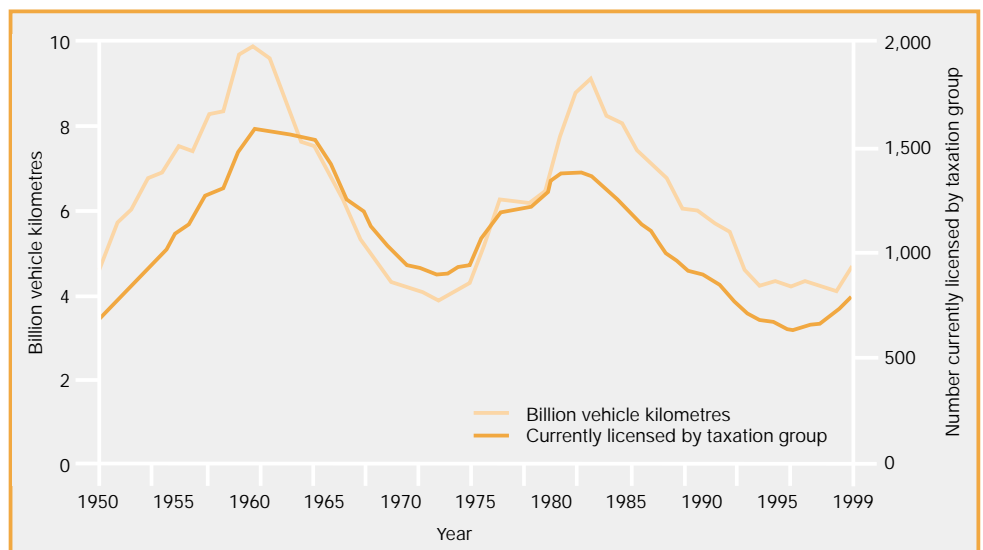
Further details on motorcycle stock can be found in article 7 in this report entitled *The use and characteristics of vehicle stock data*.

The increase in larger motorcycles can be accounted for by the numbers of larger motorcycles that were registered for the first time. In 1999, motorcycles over 500cc accounted for 51 per cent (87 thousand) of new registrations compared with 29 per cent in 1989 (29 thousand). However, the recent peak was over 60 per cent (74 thousand) in 1997, although less than the actual number for 1999.

## Motorcycle traffic

Motorcycle traffic has a clear set of peaks and troughs over the last 50 years. Traffic rose from 4.4 billion vehicle kilometres in 1950 to a peak of 10.0 billion in 1960. It then fell back to less than 4 billion in the early 1970s before increasing again to 9.2 billion in 1982. This has been followed by a fall to around 4 billion in the late 1990s, although in the latest year (1999) there was a 16 per cent increase in traffic from 3.9 billion to 4.6 billion.

Chart E.2 Motorcycle traffic and numbers licensed: 1950–1999



As might be expected there seems to be a correlation between the trends in motorcycle stock and vehicle kilometres. This has been more noticeable since the early 1980s (Chart E.2).

The rise in 1999 appears, from first indications, to be an upturn in motorcycle mileage caused mainly by the increase in the number of motorcycles licensed.

### Monthly motorcycle traffic

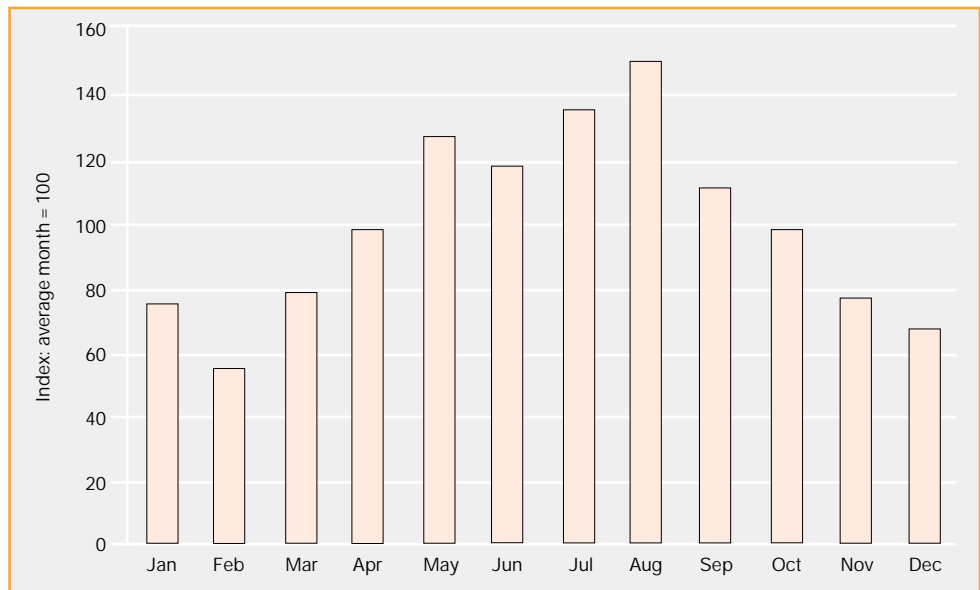
Motorcycle traffic was greatest in the summer months of May to September (averaging over 1995–1999) with over 50 per cent more motorcycle traffic on the roads in August than an average month. November to March were below average months with February traffic being the lowest (Chart E.3).

Fewer motorcycles are licensed at all during the winter months (see Box 1) and also fewer trips are made in this period, thus leading to lower traffic figures.

### Motorcycle accidents

In 1999, there were 26,192 reported two-wheeled motor vehicle (TWMV) user casualties, of which 547 people were killed, 6,361 seriously injured and 19,284 slightly injured.

Chart E.3 Motorcycle traffic distribution by month: 1995–1999 average



#### Box 1 Motorcycle stock

Excluded from the numbers of motorcycles licensed are those manufactured before 1973 and exempt vehicles (such as police and paramedic motorcycles).

Numbers licensed by body type (which include the exemptions) were 976 thousand in 1989 and 889 thousand in 1999.

The number of motorcycles registered at the end of the year differs from the stock in the middle of the year. A significant number of motorcycles are licensed for 6 months (e.g. April to September) and then stored off-road and unlicensed during the winter months.

In addition Vehicle Excise Duty (VED) evasion tends to be high among motorcycles and these unlicensed vehicles are not included in the vehicle stock figures. Evidence suggests that 25 per cent of motorcycle stock is evading the VED licence.

Further information on motorcycle stock can be found in article 7 of this publication entitled *The use and characteristics of vehicle stock data*.

Compared with the 1981–85 baseline figure, total injuries were 60 per cent lower (those killed 45 per cent lower).

Although in 1999 TWMVs accounted for less than 1 per cent of road traffic, they accounted for 16 per cent of deaths and serious injuries. A TWMV user (i.e. drivers and passengers) was 27 more times likely to be killed per kilometre travelled than a car user, and a TWMV driver was 37 more times likely than a car driver to be killed.

Even though motorcycle traffic has decreased from an average of 8.4 billion kilometres per year for 1981–85 to 4.6 billion kilometres in 1999, the fatality rate for motorcycles was about the same in 1999 as in 1981–85, just under 120 per billion vehicle kms. The killed and seriously injured rate has fallen 39 per cent from about 2460 per billion vehicle km to about 1500 per billion vehicle km, although the rate has increased slightly from the new 1994–98 baseline which will be used to measure progress after 2000.

## Motorcycle ownership

Data from the National Travel Survey (NTS) show that the percentage of households in Great Britain with at least one motorcycle has fallen from 4.8 per cent in 1985/86 to 3.5 per cent in 1989/91 and 2.4 per cent in 1997/99. The fall has been fairly steady since the late 1980s (*Table E. 1*).

Table E.1 Percentage of households with a motorcycle or car: 1985/86–1997/99

	Percentage								
	Number of cars						All households		
	None			One or more					
	1985/86	1989/91	1997/99	1985/86	1989/91	1997/99	1985/86	1989/91	1997/99
Number of motorcycles:									
None	97.0	97.8	99.2	94.2	95.8	96.9	95.2	96.5	97.6
One or more	3.0	2.2	0.8	5.8	4.2	3.1	4.8	3.5	2.4
All households	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Households were more likely to have a motorcycle if there was already a car available in the household. In 1985/86 nearly 6 per cent of households with at least one car had a motorcycle, whereas 3 per cent of households without a car had a motorcycle. By 1997/99 these percentages had fallen, with about 3 per cent of households with a car also having access to a motorcycle, compared with less than 1 per cent for households without a car.

From the NTS sample the proportion of those making a trip as a driver during the 'travel week' has also fallen from 1.4 per cent in 1985/86 to 1.1 per cent in 1989/91 and 0.6 per cent in 1997/99 (See also *Table E. 6*).

## Overall trends in motorcycle travel

The overall trend for a resident of Great Britain has been to travel more in total but less by motorcycle (as a driver or passenger). Averaging over all people, the distance travelled by motorcycle was 29 miles a year in 1997/99 compared with 37 miles in 1989/91 and 51 miles in 1985/86 (*Table E. 2*).

Table E.2 Overall trends in motorcycle travel: 1985/86–1997/99

	1985/86	1989/91	1997/99
Trips per person per year <sup>1</sup>	9	6	3
As a percentage of all journeys	0.8	0.6	0.3
Distance travelled per person per year <sup>1</sup> (miles)	51	37	29
As a percentage of total distance	1.0	0.6	0.4
Average motorcycle driver trip length (miles)	5.6	5.9	9.3
Average trip length – car driver (miles)	7.6	8.0	8.5
Average motorcycle driver trip time (mins)	17	17	24
Average trip time – car driver (mins)	19	19	20
Average motorcycle driver speed (mph)	19	21	23
Average speed – car driver (mph)	24	25	26

1. Driver and passenger.

The number of trips made by motorcycle was 3 per person per year in 1997/99 falling from 6 in 1989/91 and 9 in 1985/86.

The average length of a motorcycle driver's trip has increased by two-thirds between 1985/86 and 1997/99 from 5.6 miles to 9.3 miles, and is now 10 per cent longer than the average trip of a car driver.

The average time for a motorcycle driver's trip also increased 38 per cent from 17 minutes to 24 minutes, and was greater than the average for a car driver in 1997/99, where previously it had been less.

Average motorcycle speeds for reported trips were faster by a fifth in 1997/99 compared with 1985/86, greater than the increase of about a tenth for car speeds, although motorcycles were still slower than cars. This is possibly accounted for by the greater usage of motorcycles for work and education (see below).

## Travel by motorcyclists

The rest of this section shows trends in travel by motorcyclists, that is people who made at least one motorcycle trip as a driver in their travel week (see Box 2).

### Box 2 The National Travel Survey (NTS)

The NTS is a household survey of travel. About 3 thousand households a year answer questions relating to their travel, and complete a 7 day travel diary. Most of the data used in this article are derived from the travel diaries.

It is not possible to compare recent data with the 1975/76 NTS as motorcycle drivers were not separated from passengers for the main mode of trip.

As there are relatively few motorcycle drivers in the sample, in many cases it has been necessary to use a longer time period (1992/99) than the standard 3-year average (currently 1997/99) for which NTS data are normally presented.

Only those respondents who made at least one trip as a motorcycle driver (regardless of whether the motorcycle was owned by the driver) have been included in the majority of the article.

#### Definitions of terms used

For the purpose of diaries, a trip (or journey) is defined as a one-way course of travel with a single main purpose. A trip may be split into stages by different means of transport. For example, a trip may consist of a motorcycle ride to station, a rail stage, and finally a walk to the trip destination.

For every trip made, the details recorded by respondents include the purpose of the trip, the methods of travel for each stage and for each method the distance and time taken.

Data on trips and average trip length and average trip time in this article, record details according to the main mode of the trip, which is the mode used for the longest stage. Data on total distance travelled, time travelled and speeds are according to the mode used for a stage. For motorcycling there is very little difference between the two.

Table E.3: Overall trends in motorcycle drivers' travel: 1985/86–1997/99

	1985/86	1989/91	1997/99
Trips per person per week	11.2	10.7	8.8
As a percentage of all trips	45	42	36
Distance travelled per person per week (miles)	63	63	81
As a percentage of total distance	44	38	38
Average time spent motorcycling per week (hours)	3.1	2.9	3.4
As a percentage of total travel time	43	37	38

For motorcyclists the proportion of all trips made as a driver has fallen from 45 per cent to 36 per cent between 1985/86 and 1997/99.

Despite the fall in trips made by motorcycle there has been an increase in the distance travelled per driver from 63 miles in the travel week in 1985/86 to 81 miles in 1997/99, although this is still a fall from 44 per cent to 38 per cent of all mileage. This is mainly owing to the increase in average journey lengths made by motorcycle (see above).

The number of hours spent travelling decreased between 1985/86 and 1989/91, but has since increased again due to the greater distance travelled. The overall increase was 7 per cent with the average driver now spending 3.4 hours in the travel week riding a motorcycle in 1997/99, although this is a drop in the proportion of all time spent travelling from 43 to 38 per cent since 1985/86.

### Motorcycle travel by area type

For the remainder of the article data is analysed for the period 1992/99 as sample sizes are too small to provide reliable analyses for a shorter period of time (see Box 2).

Motorcyclists living in London were the heaviest users of a motorcycle, making most trips and for a further distance (Table E.4), however those living in rural areas made less trips but travelled further than average.

Table E.4 Motorcycle use by area type of residence: 1992/99

	London Boroughs	Met areas	Urban areas of population			Rural areas	All areas
			> 250k	25–250k	3–25k		
Trips per driver per week	9.7	8.5	9.2	9.2	9.3	9.0	9.2
Distance per driver per week (miles)	91	73	68	62	72	78	72
Average trip length (miles)	9.4	8.6	7.3	6.8	7.9	8.6	7.8

The average trip length was greatest in the London and Metropolitan areas and in rural areas, perhaps owing to the greater distance travelled for commuting, for which motorcycles are mainly used (see below).

### Why do people travel by motorcycle

Of the average 9.2 trips drivers made in the travel week by motorcycle in 1992/99 the main purpose of the trip was most likely to be commuting, business or education, which accounted for 57 per cent of trips and 50 per cent of the distance travelled. A further 16 per cent of trips were made to visit friends, the second most important purpose (Table E.5).

Table E. 5 Motorcycle drivers' travel by trip purpose: 1992/99

	Work, business and education	Shopping	Other personal business and escort	Visit friends	Other leisure	All purposes
Trips per person per week	5.3	1.1	0.7	1.4	0.7	9.2
Miles per person per week	36	5	4	12	16	72
Average trip length (miles)	6.7	4.6	5.5	8.2	21.3	7.8

On average the distance ridden for work or education was 6.7 miles. For leisure purposes (including holidays and day trips) the average was 21.3 miles per trip.

In comparison the average shopping trip was only 4.6 miles in length.

## Motorcycle travel by sex and age

From the NTS sample men were 6 times more likely to register a trip as a motorcycle driver than women. Overall 1 per cent of the sample registered a motorcycle trip. This was more than doubled for men less than 60 years old (Table E. 6).

Table E.6 Motorcycle drivers' travel by sex and age: 1992/99

	Men				Women	
	16–29 years	30–59 years	60+ years	All 16+ years	All 16+ years	All 16+ years
Percentage of sample making a trip	2.3	2.2	0.6	1.8	0.3	1.0
Trips per person per week	10.2	8.8	8.2	9.1	9.6	9.2
Miles per person per week	85	76	44	76	44	72
Average trip length (miles)	8.3	8.7	5.3	8.3	4.6	7.8

Although women were less likely to be motorcycle drivers than men, those who used motorcycles made about the same number of trips as men (9.6 trips in the travel week compared with 9.2 for men). However, the overall distance travelled by women was 42 per cent less than that travelled by men.

Women tended to make much shorter trips on average than men, travelling 4.6 miles compared to 8.3 miles. This resulted in males drivers travelling nearly 76 miles in the travel week compared with 44 miles for women. Men aged 16–29 were the heaviest users of motorcycles in terms of distance ridden averaging 85 miles in the travel week for this age group.

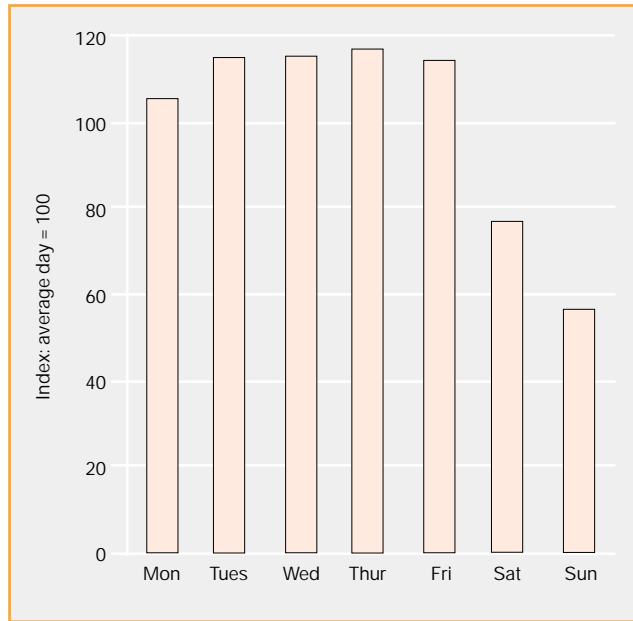
There was little difference in the reasons why men and women travel by motorcycle. Both used the motorcycle the same amount for trips to work, however, men were more likely to use a motorcycle for leisure trips (excluding visiting friends) and women more for personal business (such as shopping).

## Motorcycling by day of the week

Four out of five motorcycle trips were made during weekdays, with little difference between the amount of use each day (except slightly fewer on Mondays). Sunday accounted for the least use of motorcycles with 43 per cent fewer trips being made than on an average day (Chart E. 4). This pattern is again related to the heavy use of motorcycles for work and education.

A larger proportion of respondents to the NTS made a motorcycle trip during May to August (1 per cent) compared with the winter months' average of 0.6 per cent. This reflects the difference shown in Chart E. 3 on road traffic and can also be

Chart E.4 Motorcycle trips by day of the week: 1992/99



explained by the fact that there are a large number of motorcycles only licensed for 6 months of the year (see article 7 in this report entitled *The use and characteristics of vehicle stock data*).

### Motorcycle size

In 1992/99 39 per cent of the motorcycles in the NTS sample were over 500cc and only 17 per cent 50cc or less. These figures compare reasonably with the 1992/99 averages for motorcycle stock, which were 36 per cent and 19 per cent respectively.

The average distance travelled by a motorcycle increased as its size increases, from 2,270 miles for small motorcycles of 50cc and less to 4,290 miles a year for motorcycles over 500cc (*Table E. 7*).

Table E.7 Motorcycle travel by engine size and trip purpose: 1992/99

Size of motorcycle:	Percentage					Percentage/miles	
	Work, business and education	Shopping	Other personal business and escort	Visit friends	Other leisure	All purposes <sup>1</sup>	Average annual mileage <sup>2</sup>
50 cc and less	56	8	9	21	7	100	2,270
51–125 cc	67	10	4	13	5	100	3,000
126–500 cc	46	9	7	20	18	100	3,210
501cc and over	37	6	6	16	35	100	4,290
All sizes	46	7	6	17	23	100	3,440

1. Based on journeys made by motorcycles during the travel week.  
 2. Based on annual estimates per motorcycle.

The proportion of mileage for smaller motorcycles was greatest for commuting, business and education than for other purposes. Over half of the mileage travelled for motorcycles under 125cc was for this purpose, while larger motorcycles over 500cc were used more for leisure purposes than smaller motorcycles, although still the main use (in distance) was for work and education. As leisure includes holidays and day trips, the greater mileage could be explained by larger motorcycles being used more for those purposes which are on average much greater in length than commuting journeys (see *Table E. 5*).

## References

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1. Transport Statistics: DETR: *Vehicle Licensing Statistics: 1999*, Transport Statistics Bulletin SB (00) 17, DETR.
  2. Transport Statistics: DETR: *Road Traffic Statistics: 1999*, Transport Statistics Bulletin SB (00) 20, DETR.
  3. Transport Statistics: DETR: *Road Accidents Great Britain: 1999 – The Casualty Report*, Transport Statistics, DETR.
  4. Transport Statistics: DETR: *National Travel Survey: 1997/99 Update*, Transport Statistics Bulletin SB (00) 22, DETR.
  5. Transport Statistics: DETR: *National Travel Survey Technical Report 1999*, National Statistics.
- NB All the above publications are available from the DETR website at <http://www.transtat.detr.gov.uk/>