

VED Reform: Options and opportunities

Summary

The case for action and principles for reform

This paper argues that more must be done to boost sales of low-carbon cars to the private consumer, based on a detailed market analysis.

VED reform – opportunities and impacts

The Energy Saving Trust has identified the following principles for VED reform, which frame the rest of the proposals in the paper.

1. Very low carbon cars (Band A) should pay very low, or zero VED.
2. Very high carbon cars should pay significantly higher VED than they do now.
3. A new Band G should be introduced for cars with emissions greater than 210 g/km CO₂.
4. The remaining VED bands should be graduated to reward lower-carbon cars and penalise higher-carbon cars.

Impact of residual values and the “multiplier” effect on the company car market

This paper explains the interaction between VED reform and the company car market. If VED were to be reformed in line with the Energy Saving Trust principles, residual values for low-carbon cars would be strengthened, while residual values for high-carbon cars would be weakened.

These changes in residual values would be reflected in monthly leasing costs, making it far more financially attractive for businesses to consider low-carbon cars. A further advantage of this approach is that higher VED rates on high-carbon cars would act against the current trend of people opting out of company car schemes to take advantage of lower tax on high-carbon cars.

1. The case for action

1.1 Trends in carbon emissions from road transport

As illustrates, total CO2 from road transport has stabilised in recent years (figure 1). Within the road transport sector, emissions from cars have remained relatively stable, as improvements in fuel economy have balanced increased mileage (figure 2).

Figure 1: UK CO2 emissions

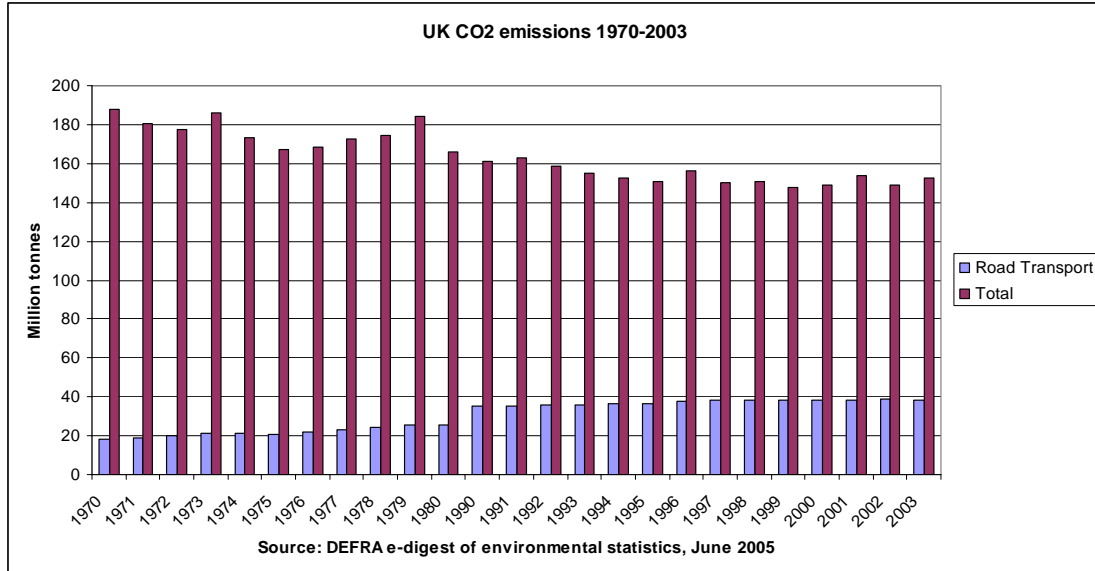
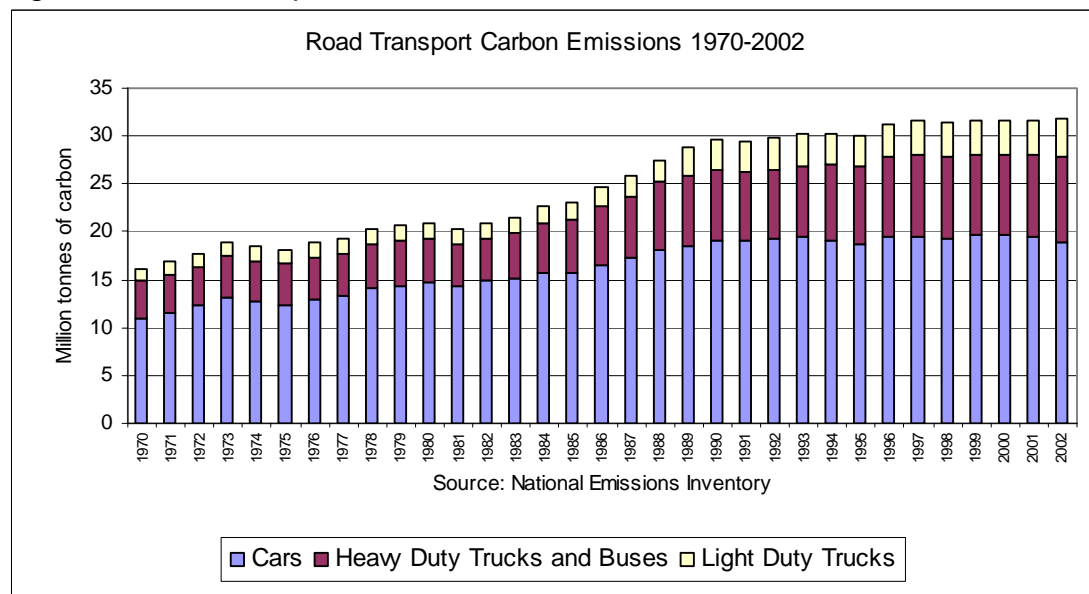


Figure 2: Road transport carbon emissions



1.2 Key trends in the new car market

The UK has one of the highest average CO2 figures in the EU (figure 3). Worryingly, average CO2 for cars sold to the private consumer market are going up (figure 4). Over time there has been a shift in the carbon profile, reflected by more changes in VED bands – however in the last 2-3 years sales of Band F cars have levelled off (figure 5).

Figure 3: EU Average New Car Sales-Weighted CO2, 2002 (all fuel types)

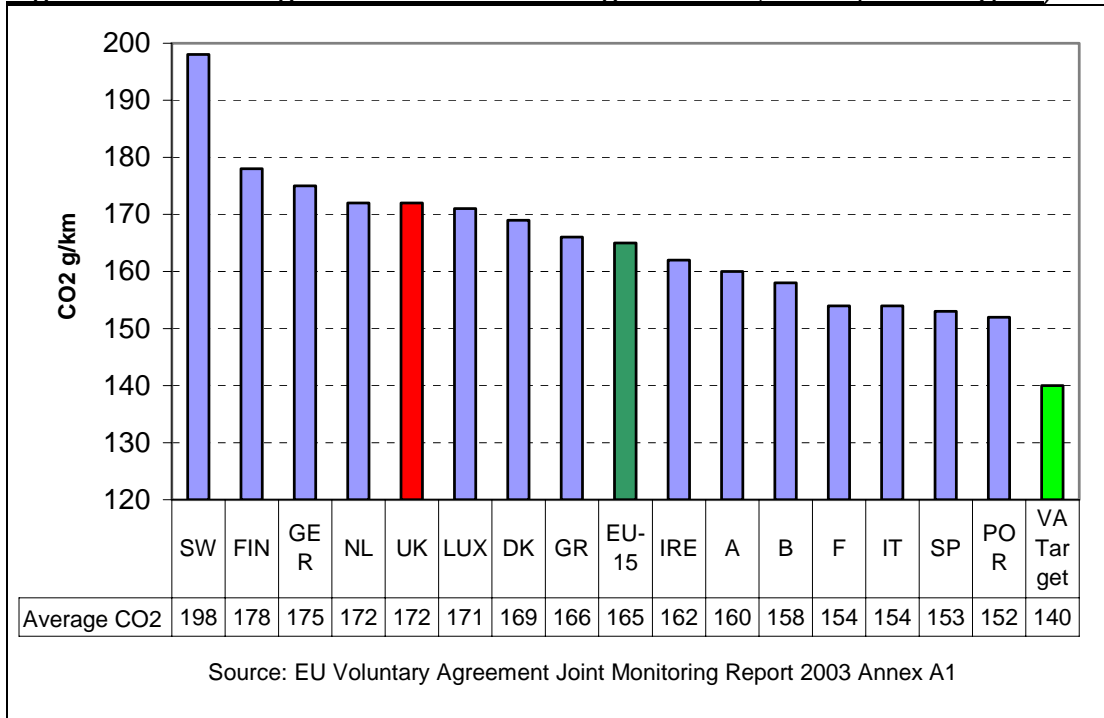


Figure 4: New Car Sales – UK Average by Type of Purchase 2001-2004

Source :SMMT

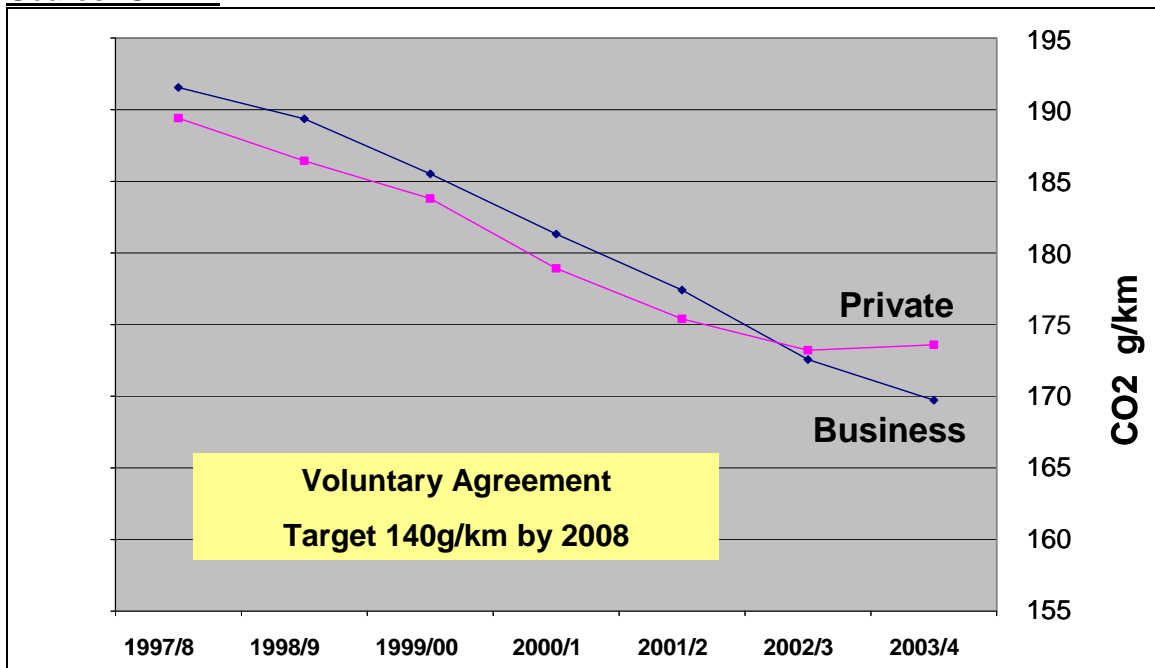
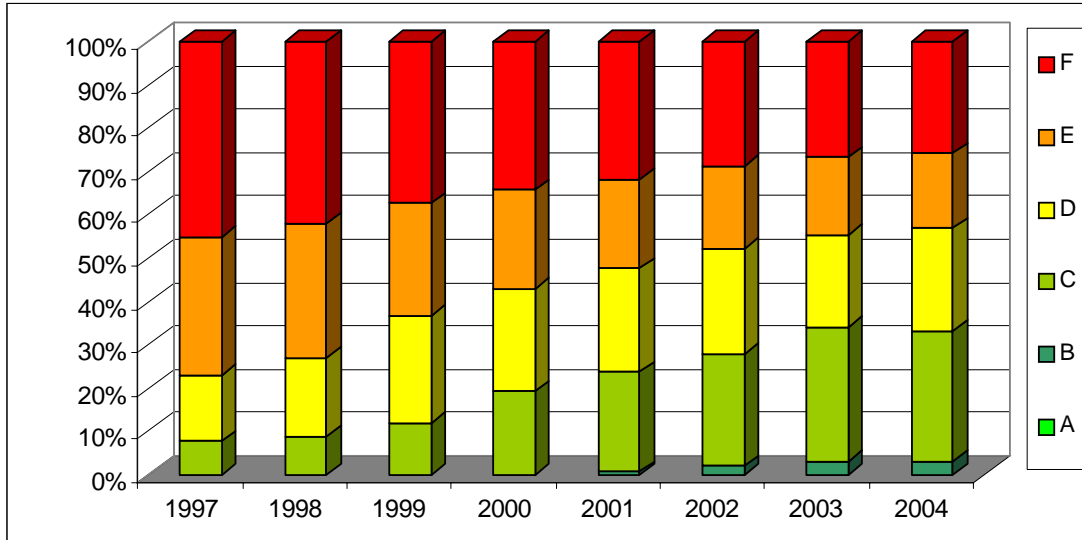


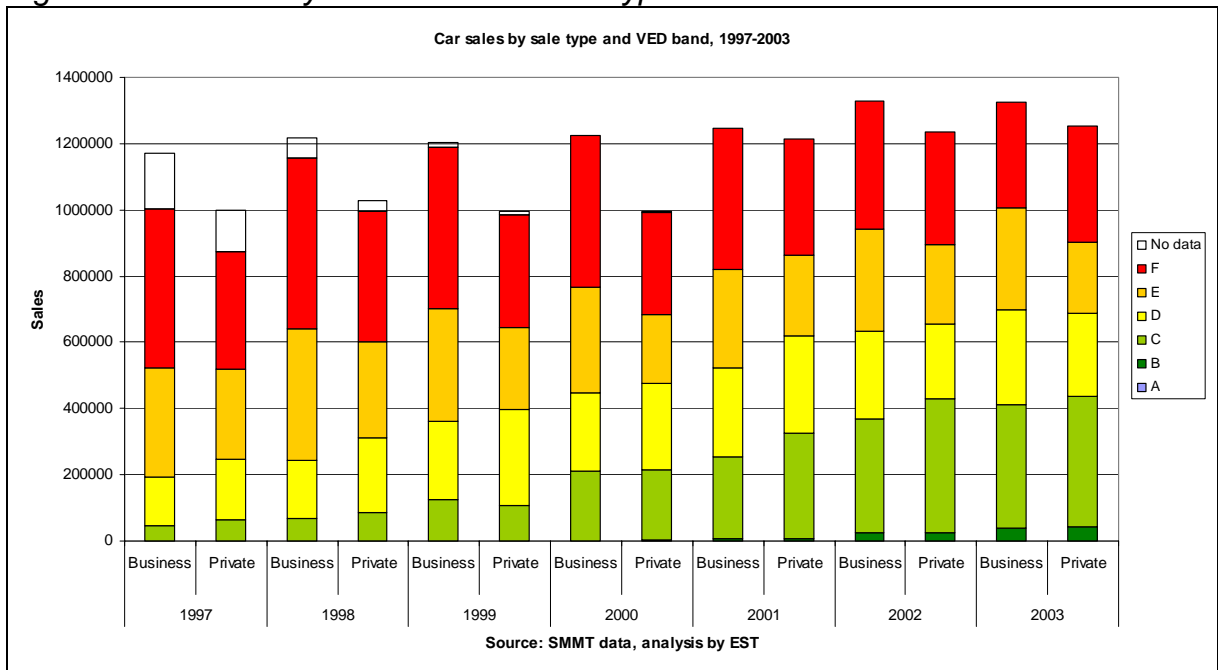
Figure 5: Car Sales by VED Band (all cars – private and business sales)
(Source: SMMT)



1.3 Carbon profile of private car sales

Private car sales account for just under half (47%) of all annual new car registrations in the UK. In 2004, this equated to around 1.2 million sales (Lane 2005). The breakdown of cars by business and private sales is shown in Figure 6 below. This chart illustrates that Band F sales have become larger in the private car market than the business car market, accounting for the higher average carbon emissions among vehicles sold to private individuals.

Figure 6: Car sales by VED band and sale type



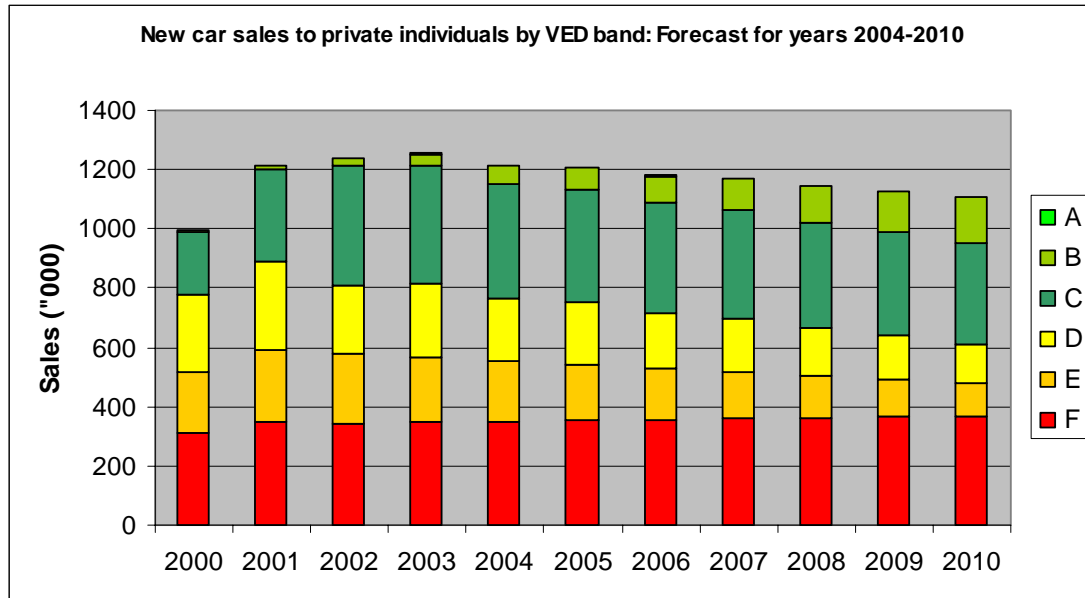
1.4 Forecast: Future private car sales by VED band

Having built reliable data on the carbon profile of car sales to the private consumer market, a forecast spreadsheet function was used to extrapolate the trends out to 2010. The results are displayed in Figure 7. Key results are:

- Total private car sales decline by about 100,000 vehicles a year by 2010 (about 8% from 2003).

- Sales in Band F are forecast to increase by about 20,000 vehicles a year by 2010.
- Bands E, D and C are forecast to decrease substantially – by around 100,000, 75,000 and 50,000 cars per year by 2010.
- Sales in Band B are forecast to increase by nearly 100,000 cars.
- Sales in Band A are forecast to remain negligible.

Figure 7: Forecast of private car sales by VED band



It should of course be noted that these are mathematical forecasts only, and ignore real-world possibilities, such as continued high oil prices, and major changes to the tax regime. Nevertheless the Energy Saving Trust believes this baseline forecast provides a useful guide to the future direction of the private passenger car market, for three main reasons:

1. Private car sales are now less-efficient than company cars sales. Sales of Band F cars to the private market are growing due to increasing number of people “opting out” of company car schemes due to the higher tax levied on high-CO2 company cars. Without changes to private car taxation, this trend is likely to continue.
2. Cars are *not* becoming more efficient: in the UK, the sales based average CO2/km figure for new cars has levelled out at around 172 g/km, and European car manufacturers are unlikely to meet the European-wide average of 140g/km.
3. Discussions with the automotive industry during research for this paper revealed that the auto industry is forecasting a decline in private car sales over the next 5 years.

1.5 Conclusion: The case for action

The Energy Saving Trust believes that the above analysis makes an overwhelming case for Government intervention to promote, incentivise and possibly regulate to boost the low-carbon car market.

2. VED reform – opportunities and impacts

Currently, VED is having little impact on the carbon profile of the private car market (a point confirmed by research by MORI for DfT¹). VED is failing for two reasons. Firstly, the top Band (Band F) is too large. Secondly, the differentials between the bands are too low to change buying behaviour. This paper first sets out key principles for VED reform, then proposes in more detail how these problems could be addressed.

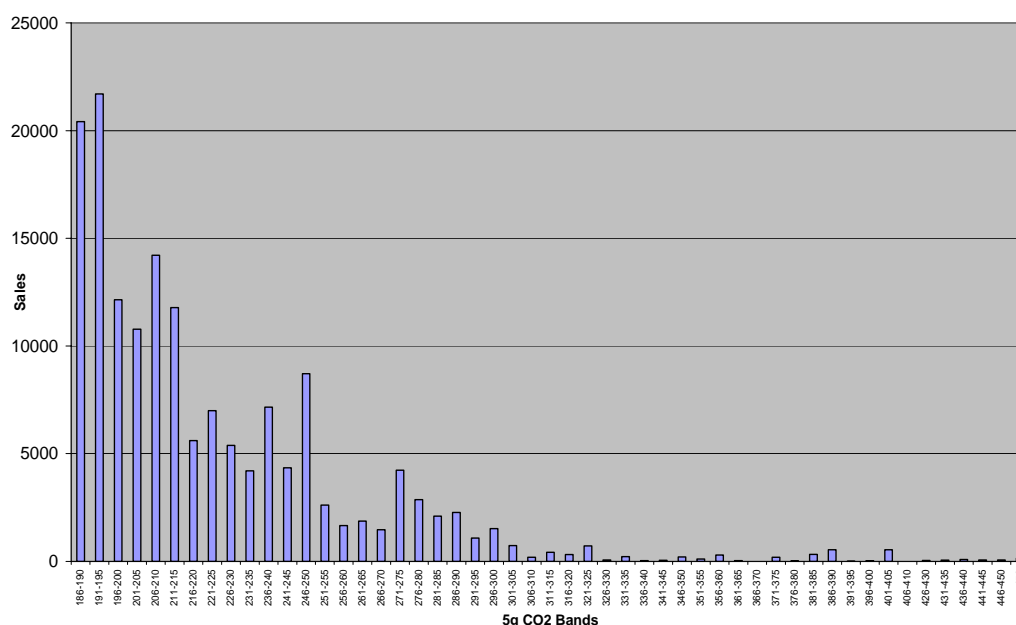
2.1 Energy Saving Trust principles for VED reform

1. Very low carbon cars (Band A) should pay very low, or zero VED
2. Very high carbon cars should pay significantly higher VED than they do now
3. A new Band G should be introduced, to separate very high-carbon cars into a higher band
4. The remaining VED bands should be graduated to reward lower-carbon cars and penalise higher-carbon cars.

2.2 Additional VED band

Currently over 50% of vehicles registered for sale in the UK fall into Band F. This means that those people shopping for a larger, more powerful car have little information on more efficient models within this Band. The Energy Saving Trust therefore recommends that a new Band “G” should be set for new cars with high CO₂ emissions. This new Band G should include around half of the sales currently in Band F to ensure an even distribution. Figure 8 below illustrates the sales distribution within Band F, showing that most Band F cars sold are under 300 gCO₂, with a long “tail” representing very high-performance, high-CO₂ cars.

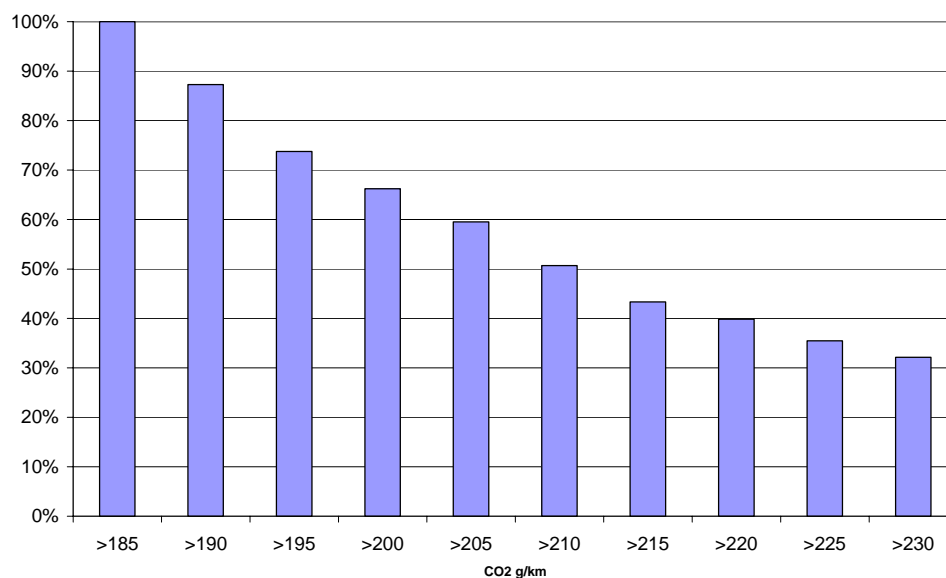
Figure 8: Distribution of Car Sales within VED Band F, 2004-5



¹ Assessing the Impact of Graduated Vehicle Excise Duty - Quantitative Research, MORI, March 2004
http://www.dft.gov.uk/stellent/groups/dft_roads/documents/page/dft_roads_027589.hcsp

EST tested a number of options for a new Band G, to see how many cars would fall into the band, and what percentage of the current Band F they represent (see Figure 9, below). This analysis demonstrates that **an appropriate new Band G would for cars with emissions greater than 210 g/km CO₂**, since this would cover 51% of the current number of cars sold in Band F. This new band would have the additional benefit of creating an additional Band for the new passenger car CO₂ label, which currently has only 6 bands (A-F), unlike labels for white goods.

Figure 9: New VED Band - Percent of 2004-5 Band F Sales



2.3 Increased VED differentials

While it is clear that raising annual VED costs could have a major impact on purchasing decisions, surprisingly little work has been undertaken to fully understand how car buyers would react to it. Further, the research that does exist appears to be somewhat contradictory. Two studies are briefly summarised below.

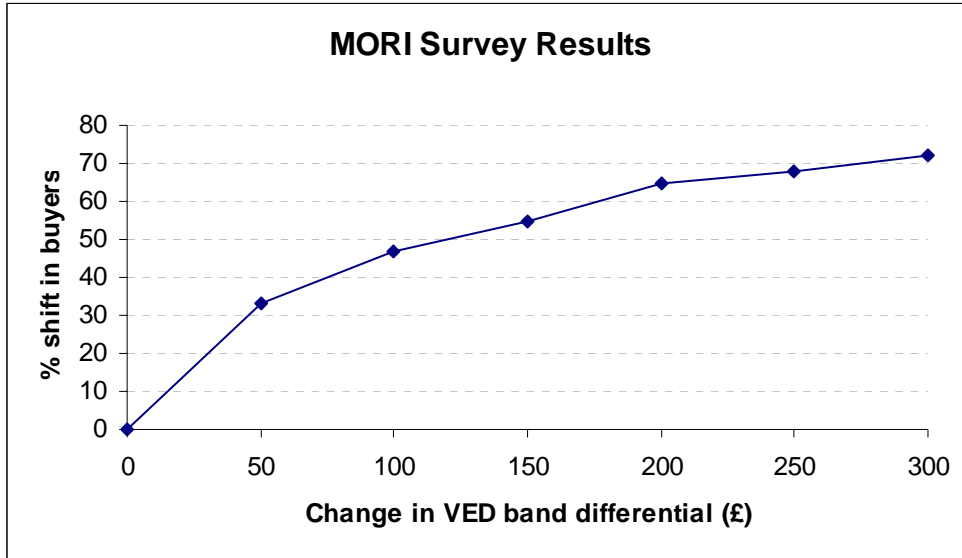
MORI, 2003²

A study carried out by MORI for Department of Transport (DfT) in 2003, investigated the effect that introducing larger VED band differentials could have on new car sales (i.e. increasing the price difference between bands). The MORI study found that if VED differentials were increased by £50, £100, or £150, then 33%, 47% and 55% of people would, respectively, choose a different vehicle (i.e. a vehicle in a lower VED band) in order to take advantage of the cost saving. The study found that people claimed that they would react strongly to the first £50 increase, and gradually less strongly as the rate increased (see figure 10 and Appendix Table A1).

Energy Saving Trust has reservations over these figures. The study ascribes the same reaction to VED to all buyers. In practice, higher-income consumers who are looking at high-value, expensive, high-carbon Executive cars are likely to react less strongly to increased VED differentials than lower-income consumers looking at cheaper, smaller and more efficient cars.

² MORI, 2003. Assessing the Impact of Graduated Vehicle Excise Duty - Quantitative Research. DfT 2003

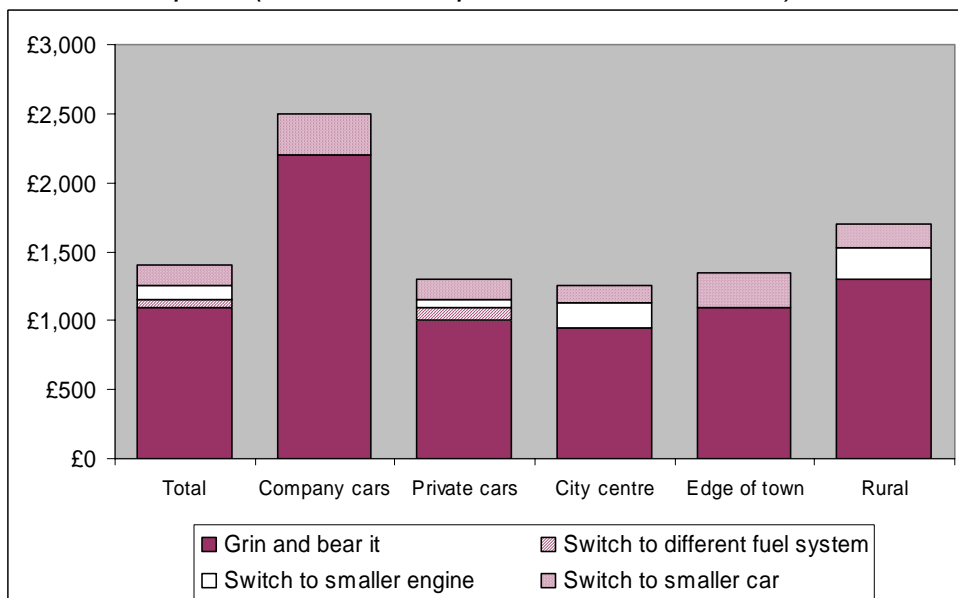
Figure 10: MORI survey results –change in buyer behaviour as VED differentials increase



Lane, 2005³

A major review of the literature on consumer behaviour, carried out for the Low Carbon Vehicle Partnership, paints a different picture. It identifies a report from the RAC Foundation that claims that, although car buyers say cost is paramount in their decision-making, in reality, they are prepared to endure large increases in costs before changing their behaviour (figure 11). On average, the report notes that annual costs have to increase by at least £1,100 before private car drivers will consider switching to an alternative fuel or smaller engine (both of which are preferred to a smaller car).

Figure 11: Additional annual costs motorists will endure before switching to an alternative option (RAC, 2004 reproduced in Lane 2005)



³ Lane, 2005. Consumer attitudes to low carbon and fuel-efficient passenger cars Final Report Low Carbon Vehicle Partnership March 2005

2.4 Conclusions on VED differentials: Suggestions for further research

The main conclusion that can be drawn here is that consumers will change their purchasing behaviour if VED rates are increased, but available research does not go far enough to understand how great the increase needs to be in order to change behaviour.

To better understand the reactions of private car buyers, the Energy Saving Trust recommends further research into the buying behaviour of consumers in different income brackets, using a “trade-off” analysis to take people through vehicle options and cost implications in terms of fuel costs and VED at increased rates. This type of research would give a more realistic picture of likely consumer reactions to changes in VED differentials.

A final point is that the lack of awareness of VED is a major dent in its effectiveness as a policy measure. The Energy Saving Trust applauds the UK Automotive Industry for agreeing to voluntarily introduce a new CO2 car label, which is based on VED bands. This label will help increase awareness of VED and improve its effectiveness.

3. Impact of residual values and the “multiplier” effect on the company car market

The reports quoted above ignore the company car market in relation to VED, which is an over-simplification. VED must be paid by the legal owners of the car. In the company car market, this is typically the companies themselves, or more often a third-party leasing company. Prices for the monthly lease of a car are set by the leasing company on the basis of the full costs of the vehicle, and its likely resale value at the end of the lease. Clearly then, an increase in VED would change these cost calculations, both in terms of the actual annual VED rate paid and in terms of the future value of the car.

3.1 VED impact on residual values

VED is paid annually. Therefore, any increase in VED rates will have an impact on the future value of a car – either positively or negatively. If the Energy Saving Trust principles for VED reform were adopted, then residual values for low-carbon cars would be strengthened, as annual VED payments would be comparatively low, whereas residual values for high-carbon cars would be weakened, since VED annual VED payments would be comparatively high. This fact makes VED, potentially, an extremely powerful policy tool, as the VED rate “lives” with a car throughout its life.

3.2 Impact of increased VED on the car leasing industry

There are a variety of car lease deals on offer to companies, and, increasingly, to private consumers. Under these arrangements the customer agrees a monthly fee for a car over a set period of time (typically 2-3 years). Annual mileage and responsibility for maintenance are agreed between the parties to the agreement. At the end of the lease the car is typically returned to the leasing company, which will then sell it. Monthly lease costs are based on the “lost value” of the car over the period of the lease. To make a profit on buying and selling cars, leasing companies must earn enough money from their lease customers over the lease period to make up for the devaluation of the car over that time. This process is further explained below:

3.3 Illustrative example: Car lease

1. Start of process: Lease Company buys car (at, say, £20,000).
2. For the first 3 years of the car's life, the car is leased to a company (or individual).
3. At end of Year 3, the car is returned to lease company. Because of devaluation, it is now worth £10,000.
4. This means that the lease company must charge at least £10,000 over the 3-year lease period if it is to make any profit on the car. For example, to make £1,000 profit the company would need to make £11,000 over 3 years, implying monthly charges of around £306 / month.

The impact of VED reform on the car-leasing market is illustrated by showing how this example would change if VED were reformed in line with Energy Saving Trust principles listed above.

Potential impact of VED reform: High – Carbon Car

If VED is reformed and the car in the example is high-carbon, it may be worth less than £10,000 at the end of the lease (say £7,000 for the sake of argument). To make the same £1,000 profit on the car, the lease company would need to make £14,000 over three years, implying monthly charges of around £389 / month.

Potential impact of VED reform: Low – Carbon Car

In contrast, if VED is reformed and the car in the example is low-carbon, it may be worth more than £10,000 at the end of the lease (say £13,000 for the sake of argument). To make the same £1,000 profit, the lease company would need to make £8,000 over three years, implying monthly payments of around £222 a month.

3.4 Note on forecast residual values

While the above example is illustrative only, a 50% loss in value over three years is a reasonable assumption, based on data from "CAP Monitor"⁴. Future residual values for some well-known car models is displayed in Figures 12 and 13 (details of the models used are shown in Appendix Table A2).

3.5 Conclusion – impact of VED on the company car market

This illustrative example, which is clearly not based on real costs, indicates that changes in VED and the resulting changes in residual values would have a "multiplier" effect that potentially increases the incentive for lease car customers to switch to lower-carbon options.

An important associated point is that increased VED on high-carbon cars could also reduce the number of company car drivers opting out of company car schemes to avoid the higher tax on high-CO₂ cars under Company Car Tax.

⁴ A product from CAP, the specialists in price guides for used vehicles, and the publishers of the well-known "black books" on car values.

Figure 12: Residual values of new cars – £ (selected models)

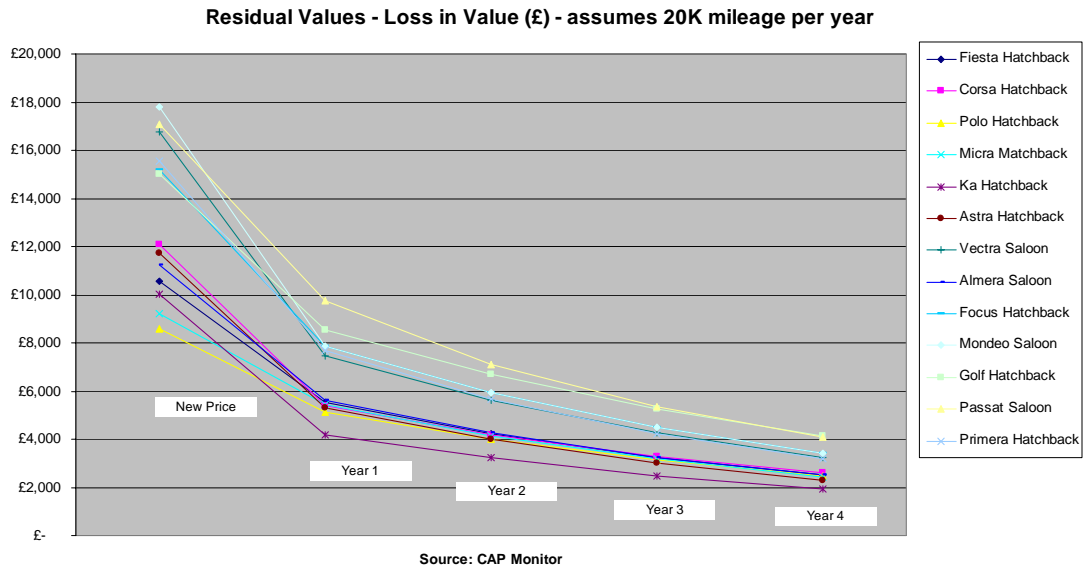
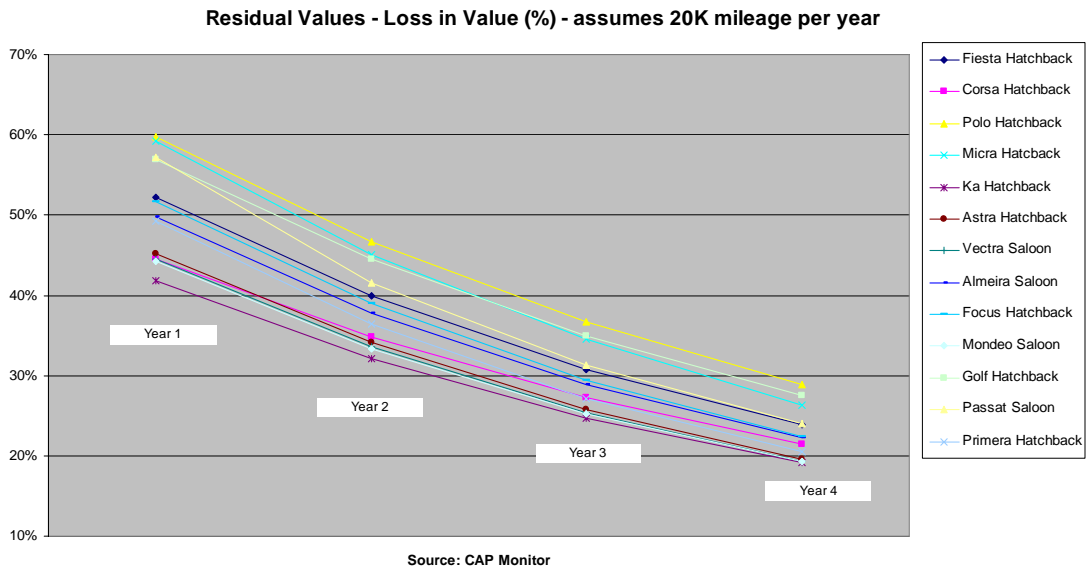


Figure 13: Residual values of new cars – % (selected models)



Appendix

Table A1: MORI survey result on raising VED differentials						
Q23: If the Government changed the road tax bands so that the difference between the bands was ... a year would you choose a car with lower emissions next time you buy.						
	Up to £50	Up to £100	Up to £150	Up to £200	Up to £250	Up to £300
Yes, would choose different vehicle (cumulatively) - %	33	47	55	65	68	72
Source: MORI 2003, "Assessing the Impact of Graduated Vehicle Excise Duty - Quantitative Research"						

Table A2: New and forecast residual car values, selected models							
Model	Detail	VED Band*	New Price	Yr 1 Residual Value / £	Yr 2 Residual Value / £	Yr 3 Residual Value / £	Yr 4 Residual Value / £
Fiesta Hatchback	1.4 Zetec 5 dr [AC]	C	£10,582	5525	4225	3250	2525
Corsa Hatchback	1.4i 16V Sri 5dr	C	£12,080	5375	4200	3300	2600
Polo Hatchback	1.2 E 65 3dr	C	£8,582	5125	4000	3150	2475
Micra Matchback	1.2 SE 3dr	D	£9,207	5450	4150	3175	2425
Ka Hatchback	1.3i luxuryKa 3dr	E	£10,032	4200	3225	2475	1925
Astra Hatchback	1.6i Envoy 5dr	E	£11,733	5300	4000	3025	2300
Vectra Saloon	1.8i Design 4dr	E	£16,757	7450	5625	4250	3225
Almera Saloon	1.5 SE 4dr	E	£11,237	5600	4250	3250	2500
Focus Hatchback	2.0 Ghia 5dr	F	£15,202	7850	5925	4475	3400
Mondeo Saloon	2.0 Ghia 4dr	F	£17,787	7875	5925	4500	3425
Golf Hatchback	1.6 SE 5dr Auto	F	£15,010	8550	6675	5250	4125
Passat Saloon	1.8T 20V SE 4dr	F	£17,077	9775	7100	5350	4100
Primera Hatchback	1.8i SE 5dr	F	£15,567	7675	5675	4225	3200
Source: CAP Monitor							
*VED band was obtained by comparing model variants given by CAP Monitor with model variants listed in VCA data							
Assumes cars are driven 20,000 miles per year							