An evaluation of the UK’s shift to CO$_2$ based Company Car Taxation

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and member of the UK Green Fiscal Commission
In the UK, company cars are 50–60% of all new car sales, so are a major determinate of the emissions performance of the UK car stock

- Historically company cars have tended to have a poorer fuel economy than privately purchased cars
- EU regulations require average new car emissions to fall to 130g/km by 2015 (UK currently 144 g/km)

Cars provided by employers and available for private use are taxed as benefit in kind

If free fuel for private use is provided there is also a tax charge

- A cash equivalent value is added to an individual’s income for tax purposes
The old tax system

• Until 2002 the cash equivalent for tax purposes was assessed as 35% of the car’s new list price, reduced to 25% if users drove more than 4 000km on business and to 15% if they drove 29 000km on business*
  – This was widely criticised as generating car travel and CO₂ emissions to cut tax liability
• So, the old tax system was felt to both support the purchase of high CO₂ emitting vehicles that were then driven further to cut tax liability

* 2,500 miles and 18,000 miles
CO$_2$ –based taxation

- Since April 2002, the UK has used the car’s CO$_2$ emissions to determine the cash equivalent of the benefit on which tax is due.
- This is done by weighting the list price of the car by a percentage factor reflecting CO$_2$ emissions to produce the cash equivalent.
- The percentage ranges from 0% to a maximum of 35%.
- From 2010 electric cars were rated at 0% and ultra-low emission cars (75g CO$_2$ or less) at 5%.
<table>
<thead>
<tr>
<th>CO₂ emissions (g/km)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>1-75</td>
<td>5%</td>
</tr>
<tr>
<td>76-120</td>
<td>10%</td>
</tr>
<tr>
<td>121-129</td>
<td>15%</td>
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<tr>
<td>130-134</td>
<td>16%</td>
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<tr>
<td>135-139</td>
<td>17%</td>
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<td>140-144</td>
<td>18%</td>
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<tr>
<td>145-149</td>
<td>19%</td>
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<tr>
<td>150-154</td>
<td>20%</td>
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</tbody>
</table>

- With increases of 1% for every rise of 5g CO₂ per km until:
  - 220-224: 34%
  - 225 and above: 35%
Impacts of the tax change

Vehicles

• Shifting down the percentage bands can save large amounts of tax
  – e.g. for a 40% tax payer with a €25 000 car, shifting from the 25% to 15% band saves €1 000 per annum

• Most cost effective and easiest way has been to shift to best in class and diesel cars (not even hybrids)

• Diesel car purchases have surged since 2002

• 60%+ of company car purchases are now diesel
  – Was 30% in 2002

<table>
<thead>
<tr>
<th></th>
<th>Petrol</th>
<th>Diesel</th>
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<tbody>
<tr>
<td>2000</td>
<td>87%</td>
<td>13%</td>
</tr>
<tr>
<td>2002</td>
<td>85%</td>
<td>15%</td>
</tr>
<tr>
<td>2005</td>
<td>79%</td>
<td>20%</td>
</tr>
<tr>
<td>2009</td>
<td>74%</td>
<td>26%</td>
</tr>
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</table>
Impacts of the tax change

Distance

- Surveys suggest old tax system did generate unnecessary driving for business
- Business mileage by company cars is now 45% lower than under old system

<table>
<thead>
<tr>
<th>Year</th>
<th>Business</th>
<th>Commuting</th>
<th>Other Private</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>13 800</td>
<td>6 900</td>
<td>6 400</td>
</tr>
<tr>
<td>2009</td>
<td>7 600</td>
<td>6 800</td>
<td>6 900</td>
</tr>
</tbody>
</table>

Annual Kilometres of Company Cars

Source: UK National Travel Survey
Potential Impacts

• Shifting to an electric car would save even more tax

• Individual would benefit by at least €2 000 per annum for the car (and another €1 500 if fuel was provided)

• The company would gain about €1 000 per annum in reduced National Insurance Contribution

• But it appears there are currently other barriers to companies buying electric cars (initial cost, risk, suitability, range, residual value)

• Even hybrids are rare as company cars

• This concession looks likely to support the later uptake of electric cars rather than getting pioneers to invest
Overall CO$_2$ impact

- HMRC commissioned two reports on the reform after 1 and 3 years. These reports concluded:

- Average CO$_2$ emissions from company cars in 2004 were 15g/km less due to the reform
  - average CO$_2$ emissions on all new cars sold in the UK dropped from 174.7g/km in 2002 to 144.5g/km in 2010.

- The cut in business kilometres saves 25,000-35,000 tonnes of carbon emission per annum

- Effect on the vehicle stock grows over time:
  - The new system cut CO$_2$ emissions from cars by 0.2-0.3 MtC per annum for 2005, growing to 0.35-0.65 in 2010 and expected to be between 0.4-0.9 MtC in the long run to 2020 per annum
  - This is about a 1% cut of all UK car CO$_2$ emissions
Indirect and ‘Rebound’ effects

• An indirect effect is that many drivers are opting out of Company Cars
  – Dropped from 1.6m in 2001 to 1.2m in 2005.
  – 2010 registration of new company cars was 29% lower than in 2005
• The cars of this group have 5% higher CO$_2$ emissions as a result
• This suggests that tax policies on business travel as a whole need addressing rather than just company cars
  – (e.g. tax treatment of car allowances and km/mileage payment rates)
Conclusions

• This has been an important Ecotaxation reform
• The impact of this single measure on CO$_2$ emissions is strong because it is a large tax
  – But is mainly correcting the perverse effects of the previous tax system
• Rebound effects are emerging which point to need to reform overall vehicle system, not just a component
• Is most effective in achieving incremental improvements rather than adoption of innovative clean technologies
• But can be a supporting measure for radically clean technologies, such as electric vehicles
Information

- UK Revenue and Customs Evaluation Reports on the 2002 Company Car Taxation Reform can be downloaded from their website at: [http://www.hmrc.gov.uk/cars/policy.htm](http://www.hmrc.gov.uk/cars/policy.htm)
- Guidance on the UK Company car Taxation system is at: [http://www.hmrc.gov.uk/cars/employee-guidance.htm](http://www.hmrc.gov.uk/cars/employee-guidance.htm)
- UK Green Fiscal Commission website (downloads of Final Reports and Transport Briefing Paper) is at: [http://greenfiscalcommission.org.uk/](http://greenfiscalcommission.org.uk/)
- Stephen Potter [s.potter@open.ac.uk](mailto:s.potter@open.ac.uk)
  Web page: [http://design.open.ac.uk/potter/index.htm](http://design.open.ac.uk/potter/index.htm)