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SUMMARY

This article reviews the reforms to car taxation that have sought to promote fuel economy, cleaner fuels and reduce traffic growth. Fiscal measures to manage traffic growth have faced political difficulties and, since 2000, have given way to a somewhat ad hoc set of often contradictory policy decisions, together with a shift in focus towards the dominant issue of congestion reduction.

An eventual replacement of existing car taxation measures with a new national road user charging regime is now contemplated, but there is a danger that the confusion in purpose that now characterises transport taxation policy could be carried over to the new regime.

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The Transport Policy 'Bed of Nails'

Transport has never been an easy portfolio for a UK government minister. Back in 1981 the development of an 'integrated transport policy' was the subject of an episode of the political comedy *Yes Minister* entitled 'The Bed of Nails'. The plot was that, because transport involved so many irreconcilable desires and interests, the only politically-viable transport policy was not

to have a policy at all, least of all an integrated transport policy. The last thing Sir Humphrey wanted was for his minister to become embroiled in such a bed of nails.

Near on a quarter of a century later, transport policy has not simply remained a bed of nails - the nails have become sharper and there are more of them! The list of seemingly irreconcilable desires has grown. Car use on our densely populated island is high and the UK is arguably the most car dependent state in the EU. We have around 60 million people and 30 million vehicles, and every year more cars are driven further than before. We have the worst road congestion in the EU (Commission for Integrated Transport, 2001), which not only frustrates private motorists, but also imposes a cost burden on the economy. Building more roads, though often advocated, is now viewed as futile. Since the early 1990s research has shown that roadbuilding largely results in yet more traffic, congestion and economic inefficiency, as well as it simply being economically impossible to accommodate the pent up desire for car use growth (Goodwin *et al*., 1991 and Goodwin, 1994). The only way limited additional road capacity can help is if it is coupled with measures to manage transport demand. Thus we have a key contradiction between the deeply rooted desire for car use and the practical reality that this desire cannot be physically or economically fulfilled.

Yet, whilst car use is rising, around 30 percent of UK households do not have a car. As a result of planning policies which allowed the decentralisation of key facilities, destinations such as employment, supermarkets and educational establishments can be hard to reach for these people. Transport has become a key factor in social exclusion.

Added to this web of contradictions is the ever more urgent environmental agenda. Road traffic is a major source of nearly all air pollutants. It accounts for half of emissions of Oxides of Nitrogen, 62 percent of Carbon Monoxide emissions, 32 percent of Volatile Organic Compound emissions and 56 percent of black smoke (Department for Transport -DfT, 2003a). Technical measures, imposed by regulation (e.g. catalytic converters and fuel quality directives), have significantly cut pollution from vehicles, although ambient concentrations of Nitrogen Dioxide and fine particulate matter remain a persistent and important health problem. In the longer term,

traffic growth is set to erode the improvements achieved but, more immediately, there has been little progress regarding transport's global environmental impacts. The amount of Carbon Dioxide (CO_2) generated by transport in the UK has doubled in the last 25 years and transport is the fastest growing source of all emissions (DETR, 2000) and is the only major sector where CO_2 emissions have risen since the Kyoto base year of 1990. Regulation and voluntary agreements have led to improvements to new car fuel economy, but in practice these have made remarkably little difference to the actual 'on the road' fuel economy of the UK car fleet. 'Rebound effects' have emerged, such as changes in drivers' and car buyers' behaviour, compensating for the vehicle improvements. It even seems unlikely that the UK will meet the EU target for new cars to meet a lab test average of 140g/km of CO_2 by 2008/09. The DfT progress report (DfT 2004c), admits that "it is unlikely that the UK itself will reach the 140g/km figure by that date." This is because the improvements in fuel efficiency are being "at least partly counteracted by a trend for consumers to buy larger, less fuel efficient cars" (Thomas, 2004).

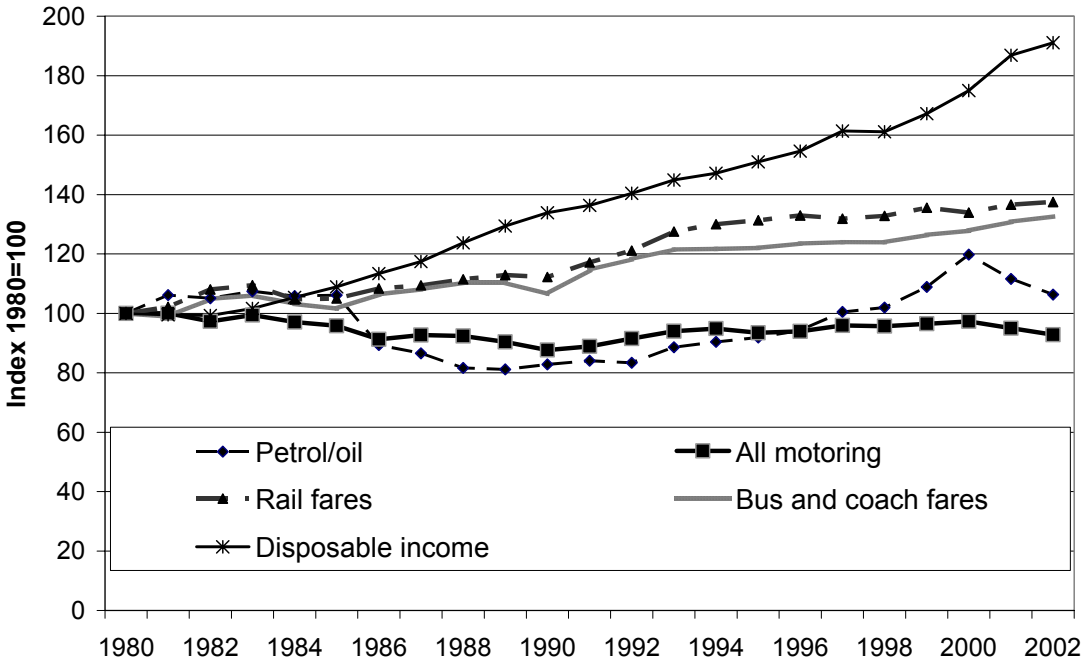
Fiscal instruments and Transport Policy

Since the early 1990s, transport policy in the UK has shifted from a demand responsive approach, involving enlarging road capacity, towards one of managing demand in order to match it to existing road capacity. This policy shift has involved a range of measures including the promotion of vehicle fuel economy and cleaner fuels, coupled with reducing road traffic growth, increasing public transport use and encouraging walking and cycling. The intention has been to cut congestion, improve accessibility and social inclusion, and reduce negative environmental impacts. This policy was initially pursued through the Conservative administration's 1995 Transport Green Paper (Department of Transport, 1995) and then the Labour administration policies in the 1998 Transport White Paper (DETR 1998), the ten-year investment plan (DETR 2000), and subsequently the 2004 Transport White Paper (DfT 2004b).

Although there have been successes in the use of cleaner fuel formulations, progress on fuel economy, as noted above, has been limited, and the historical trend towards higher car use continues unabated. At the core of both these trends is the long-term decline in real motoring

costs coupled with the long-term rise in public transport fares. Figure 1 shows that motoring costs are now less than in 1980, while disposable income has risen by 90 percent. Real-terms fares for public transport have risen significantly, despite the presence of subsidies to rail and non-commercial local bus services. The rise has been by 33 percent for bus and coach and 38 percent for rail.

Figure 1: Changes in Wealth & Private Costs of Transport 1980-2002



Data source: *DfT (2004d). Section 2.3.*

Looking at the last decade only, fuel costs have increased (until 2000 as a result of the Fuel Duty Escalator, more recently due to the rise in oil prices), but car insurance has also driven up costs. In contrast, the cost of vehicles themselves has fallen, in particular due to European Commission intervention to end price distortions affecting the right-hand drive markets. Competition has also been important, with particular pressures being over-capacity in European car production facilities and low-cost imports from the Far East.

The overall structural situation of car costs declining and public transport fares increasing created a problem in promoting the latter and has led to fiscal measures emerging as increasingly important instruments of transport policy. Cars and their fuel have for long been a source of general taxation revenue, but in the last decade some existing transport taxation

measures have been reformed to address new policy concerns as well as simply raise money. Thus transport taxation is now expected to address three goals:

- raise revenue;
- discourage growth in car use;
- promote the purchase of cleaner and more fuel efficient cars.

Tax Reforms in Practice

The UK's four most important national taxation measures affecting road transport have been:

- High Fuel Duty rates on petrol and diesel,
- Varying Vehicle Excise Duty by vehicle CO_2 emissions,
- Discounted Fuel Duty rates for alternative road fuels, including natural gas, liquefied petroleum gas, electricity, and biofuels, and
- Varying Income Tax levied on company cars by vehicle CO_2 emissions.

Fiscal measures can be placed at three crucial points in the life cycle use of cars. There are:

- Tax on the initial purchase of a vehicle,
- Tax on the ownership of a car (annual registration tax and company car taxation), and
- Tax on the use of vehicles (fuel, roadspace and parking).

It is useful to review the UK's practice in these three categories compared to the car taxation regime of other EU states.

Initial purchase

In addition to VAT, most EU states have a specific car purchase tax, with the UK and Germany being notable exceptions. The UK used to have a 10 percent Car Purchase Tax, but in 1992 it was replaced by the UK policy for high fuel duty.

In Belgium, car purchase tax is graded finely according to the power of the car, and in Finland there is a reduction for low emission vehicles. In the Netherlands car purchase tax is 45.2 percent. This may seem high (although at 105 percent Denmark's is higher), but there are

counterbalancing fixed allowances of €1540 for petrol and LPG cars, €580 for diesel cars and other allowances for cleaner vehicles. This fixed allowance cuts the charge significantly for smaller and more fuel-efficient cars and raises the price of larger and less fuel-efficient vehicles. In June 2004, France announced proposals to reform its car registration tax into a 'feebate' scheme. Cars emitting over 180g/km of CO_2 or diesels without a particulate filter will face a surcharge of €1 500 - €3 500, whereas cars that emit under 140g/km of CO_2 and diesels with particulate filters will receive a rebate of €200 to €700 (Henley, 2004). Cars emitting between 140 and 180g/km of CO_2 will be liable to neither a surcharge nor rebate.

Annual Registration Tax

All EU countries have a graded annual registration (or 'circulation') tax entitling owners to use the public highway. It is often varied by engine size or power of a car, but some nations have implemented an eco-reform to this tax. In Denmark the tax varies with fuel consumption, whereas Germany links tax liability directly to the Euro emission standards, with the least polluting car paying only 20 percent of the rate of the most polluting car. However, the overall tax is so low (about €50 per car) that its impact on car choice is negligible.

For cars registered from 2001, the UK has adopted a CO_2 emission-based system in four bands (A-D). In 2003 two further bands were added for very low CO_2 emission vehicles (Table 1), with a charge range of £55 - £165 (€81 - €243). The slightly different diesel and alternative fuels charges are to reflect air quality differences. A similar system has also been introduced for lorries, with seven charge bands according to emissions and amount of road wear imposed.

Table 1: UK Vehicle Excise Duty (Circulation) Tax Rates (£ and €), 2003

Band	CO_2 (g/km)	Diesel	Petrol	Alternative Fuels
			£	
AAA	Up to 100	75 (€110)	65 (€96)	55 (€81)
AA	101 to 120	85 (€125)	75 (€110)	65 (€96)
A	121 to 150	115 (€170)	105 (€155)	95 (€140)
B	151 to 165	135 (€199)	125 (€184)	115 (€170)
C	166 to 185	155 (€228)	145 (€213)	135 (€199)
D	Over 185	165 (€243)	160 (€235)	155 (€228)

Source: UK Inland Revenue

Taxes on Car Use

Between 1992 and 1999, both Conservative and Labour Governments in the UK operated the *'Fuel Duty Escalator*'. Linked to the abolition of Car Purchase Tax, Fuel Duty was increased above the rate of inflation, initially by 5 percent per annum and, from 1997, 6 percent per annum. This policy was justified as a major contribution towards the reduction of CO_2 emissions. Fuel demand elasticity studies (e.g. Glaister and Graham, 2000; Goodwin, 2002) suggests that the tax increases resulted in 10 percent less demand for fuel in 2000 than if the duty rates had only increased at the same rate as inflation. Department for Transport statistics show that road traffic grew by 18 percent in the six years 1987 to 1993 and by 13 percent in the six years between 1993 and 1999 when the Fuel Duty Escalator was operative (DfT, 2004e: Table 7.1). Many factors affect traffic growth, particularly the strength of the economy, so, it is hard to draw firm conclusions. However, it is reasonable to state that traffic growth would have been higher in the absence of the policy. Certainly, the UK Government (cited in Marsden, 2002) believes that the fuel duty escalator 'saved' between 1 and 2.5 million tonnes of carbon emissions. This would have occurred as a result of a range of behavioural responses, including the suppression of some travel demand.

Following blockages of oil refineries by lorry drivers and farmers in 2000, petrol and diesel duty was cut and the Fuel Duty Escalator policy abandoned. Most EU states have had a version of the 'escalator' if generally somewhat slower and less steep. By 2003 the UK was not alone in having high fuel duties, with Dutch, Finns, Swedes and Germans, as well as the British, paying more than €1 per litre of unleaded petrol.

The use of road fuel gases (liquefied petroleum gas and natural gas) is not as extensive in the UK as in some other European countries, notably the Netherlands and Italy. Discounts on Fuel Duty have increased in recent years and are now equivalent to 75 percent of the duty paid on petrol (Parkhurst, 2002). The cost of the fuel itself is higher, which means the cost to the consumer of gases is about half that of petrol. The fuels are now available in around 10 percent of filling stations, and use is increasing.

Charges on using roadspace within the EU include bridge/tunnel tolls, road tolls and cordon/congestion charging in city centres. Bridge and tunnel tolls are commonplace, and road tolls (usually only for motorways) exist in Austria, France, Germany, Greece, Italy, Portugal, Spain, and Norway. City centre congestion charging is one of the new car tax measures specifically designed to manage traffic, raise revenue (usually hypothecated), and address environmental aims. It has been introduced in three Norwegian cities (Ieromonachou, 2004) and recently in Durham and London in the UK.

Company Cars

Company car taxation is a sector-specific circulation tax. In the UK, around half of cars are purchased by commercial organisations for their employees for both business and private use. Until 2002, income tax was charged on 35 percent of the car's value per annum, with discounts for high business travel. For many years the government was criticised for this taxation method, as the reductions for high business use encouraged employees to drive more in order to cut their personal tax bills.

A major reform in UK company car taxation took effect from 2002, when the tax charge was related to a car's CO_2 emissions. The charge rises from a base level of 15 percent of a car's purchase price, for cars emitting 165 grams per kilometre (g/km) of CO_2, in 1 percent steps for every additional 5g/km over 165g/km. The maximum charge is 35 percent of a car's price. Diesel cars not meeting Euro IV emissions standards incur an additional charge of 3 percent, up to the 35 per cent ceiling. There are further reductions for company cars using cleaner fuels and technologies. Bi-fuel cars (gas/petrol) and hybrid-electric cars receive a 1 percent and 2 percent discount respectively, plus a further 1 percent discount for every 20 g/km below the minimum percentage level. Cars solely powered by electricity (battery-electrics and fuel cell cars) are charged at 9 percent of their list price. Significantly, discounts for high business mileage were

abolished, together with most age-related discounts, which had provided an incentive to drive further and to use older, more polluting cars[1].

An initial assessment of the impact of this tax change (Inland Revenue, 2004) shows that, in the first year of the new system, average CO_2 emissions of new company cars decreased from 196 g/km in 1999 to 182 g/km in 2002. The number of business miles has reduced by over 300 million miles per year and the overall effect has been to reduce the emissions of carbon from the company car fleet; by around 0.5 percent of *all* CO_2 emissions from road transport in UK. However, the company car tax reform has not stimulated demand for cleaner-fuelled cars by the company car sector, nor have they encouraged car manufacturers to develop new low-emission designs, which was also an objective of the reform.

This policy has proved influential due to the large changes in tax liability produced. A car costing £20,000 (€30,000) used mainly for business purposes under the old system would have cost an employee paying the standard rate of tax £690 (€1,035) a year. If the car is a fuel efficient one then the new tax bill will be similar. If it is an inefficient one, the bill is more than doubled to £1,600 (€2,400) per annum. This is in contrast to the relatively small tax gains of the VED reform. The latter saves users only about £100 per annum, which for most purchasers of new cars is arguably too little to influence car choice, although there may be a greater influence on the used car market.

Tax Reform and Tax Regime Change

Over the last ten years there have been significant reforms to the UK's car taxation regime. This has met with varying degrees of success and very variable degrees of political support or opposition.

By 2000, the policy to redirect tax from the purchase of cars to the use of cars through the Fuel Duty Escalator was starting to achieve results. In this context the reform to VED could have provided a useful supporting measure. However, with the Fuel Duty Escalator put into reverse

[1] Notably, 'classic cars' are excluded from these (and also certain other tax) provisions, and a minority effect has been to encourage the ownership of such cars as company vehicles. They are by definition old, and generally produce high levels of emissions.

in 2000, the VED reform alone stood no chance of having any impact. Because company car tax was a major cost to users, its reform has been effective in influencing vehicle choice.

Overall, the government has increasingly retreated from tax measures on car use, even to the extent of distancing itself from London's congestion charge. Regulations and ownership measures to improve fuel economy and encourage cleaner fuels have been maintained but, with the notable exception of the company car tax reform, have proved ineffective in the absence of strong complementary car use measures.

The new transport policy White Paper, published in July 2004 (DfT, 2004b), made official the retreat from car use tax measures. Despite a certain amount of rhetoric, the 2004 White Paper contains little on managing transport demand. It focuses on the competent management of the government's transport investments and cutting costs (of the railways in particular). The word 'environment' is there, but in reality is relegated to the sidelines. The central thrust concerns cutting traffic congestion and facilitating mobility. Road traffic is set to rise with no expansion in rail use, there is little to reverse the decline in bus patronage outside London and the target to grow bicycle use is abandoned.

Steps to rebalance the decline in car use costs and the parallel rise in the cost of public transport are totally absent. In practice this policy had been abandoned with the collapse of the Fuel Duty Escalator in 2000 coupled with the disastrous financial consequences of rail privatisation. A strategic fiscal principle of transport policy of successive Conservative and Labour administrations has given way to pragmatic and fragmented ad hoc decisions. The 2003 rail fares review replaced the policy of regulated rail fares rising by 1 per cent *less* than inflation with rises of 1 per cent *more* than inflation. With cost savings prioritised under the new transport policy, rail fares are set to rise even more, typified by the decision to raise London bus and Underground fares above inflation. Outside London, public transport fares are unregulated and have risen above inflation anyway. As noted in Table 1, the net result has been the widening of the cost gap between public transport and the car. Indeed, government projections predict car costs dropping by a further 5 percent per annum.

This produces a dilemma. The intellectual and research case for transport demand management is well proven. Even if energy and environmental considerations are discounted, trying to tackle congestion without strong demand management measures would be futile. Politically this truth is unpalatable, so the White Paper ends up arguing for demand management measures, but relegates them to politically less sensitive (and less effective) areas. Therefore motorway capacity enlargement is proposed, but tolled to 'lock in' the benefits of new capacity. No comparable demand management charges feature, for the moment, for *existing* transport infrastructure. The resolution of this paradox is that eventually (in 10-15 years) an effective fiscal measure is proposed. Linked to the White Paper was a report on the radical concept of changing our entire road tax regime (DfT, 2004a). This proposes replacing Fuel and Vehicle Excise Duty by a *'National Road Pricing.'* All cars would be instrumented to permit a mileage charge varied according to whether motorists drive on congested roads, at peak times, or on uncongested roads in the off-peak.

The 2004 White Paper therefore contains a somewhat remarkable dichotomy. One the one side is the retreat from pricing measures on car use, while at the same time accepting that transport demand management is inevitable and that simply reforming existing tax measures is not enough. The need is so great that a different transport taxation regime is required.

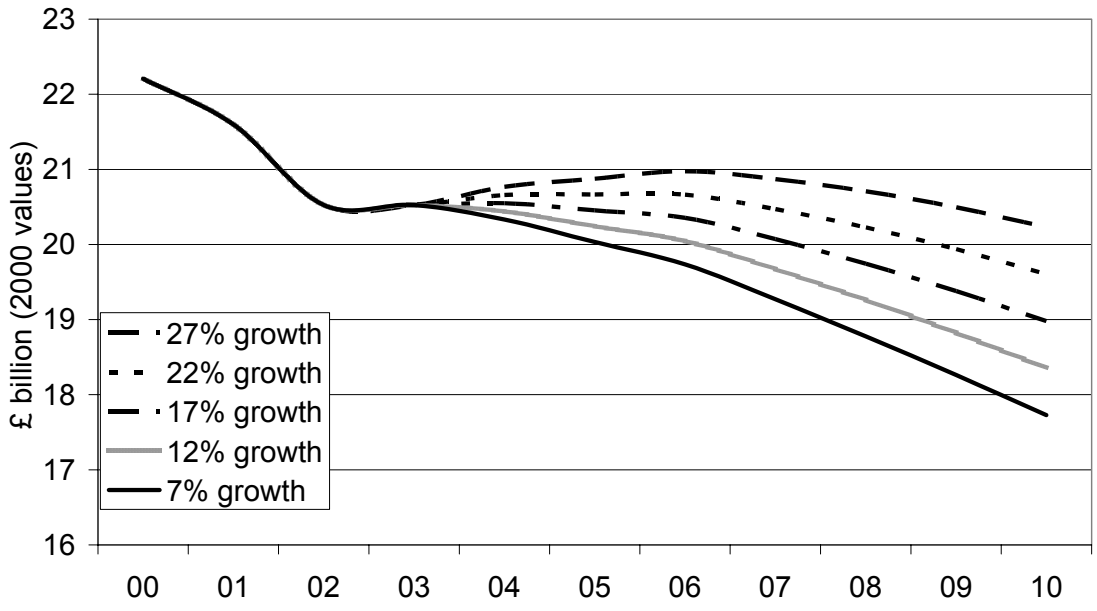
National Road User Charging

What led to the rapid emergence of such a radical concept? The official stimulus is simply that the need for demand management will not go away and so the new tax regime is needed in the long term to manage congestion as well as CO_2 emissions. With the government afraid to increase tax within the existing regime, introducing a different one seems an astute ploy.

However such a cynical view is not entirely justified. The Treasury have become concerned about a significant consequence of policies to stimulate use of cleaner cars. If successful (as in the case of company car taxation), tax yield drops. In addition, the diversity of transport fuels produces administrative difficulties and tricky equity issues. How does one justify and enforce the taxation of gas or electricity at one rate for domestic use and at a much higher rate for road transport use?

This combination of factors has been the focus for a project undertaken by this chapter's authors[2] for the Economic and Social Research Council (ESRC) under its Environment and Human Behaviour programme. Entitled *Taxation Futures for Sustainable Mobility*, the project has included an estimate of the effect upon tax revenue of the UK's existing policies to 'clean up' cars (Potter *et. al.*, 2004). Incentives to promote cleaner fuels and Fuel Duty tax cuts have reduced road fuel tax revenue by 13 percent since 2000 (DfT, 2003b). However, the full range of UK tax reforms documented above is set to cut government taxation revenues even further. As shown in Figure 2, on top of the £2 billion revenue loss since 2000, government revenues from car taxation are set to drop by up to a fifth in ten years, depending on traffic growth (see Parkhurst, 2002; 2005 for details). These projections assume maintaining duty rates at current real levels, which in practice the government has not be able to manage, and will probably not do so in future if oil prices continue to remain high[3]; high crude prices could have the 'double revenue whammy' of restraining traffic growth whilst cutting the proportion of pump price which is tax.

Figure 2: Actual & forecast UK car tax revenues for range of traffic growth rates (2000-10)



Source: Parkhurst 2005

[2] Together with Barry Ubbels of Amsterdam's Free University, Marcus Enoch of Loughborough University and James Warren at the OU.

[3] Although declining at the time of writing, the future price for December 2004 crude was around $45: nearly three times higher than the long-term price assumption of the UK Government.

Furthermore, Lane and Potter (2003) estimate that further tax losses will be incurred as new fuels emerge. Because of inherently high costs, zero fuel tax would be needed on hydrogen for fuel cell cars to be an economic reality. This would produce a £100m tax loss by 2012 if fuel cell cars take a 10 percent share of new car sales, but if they were to be 10 percent of the total car fleet, the tax loss would rise to £750m.

All the signs are that shifting price signals within the existing tax regime to favour cleaner vehicles has started to undermine the basic function of taxation – to generate government revenue. Despite accusations of 'stealth tax rises', tax revenues from cars and fuels have dropped significantly. The reality has been of 'stealth tax cuts'! Furthermore, tax revenue will dramatically decline further with the introduction of radically cleaner low carbon vehicle technologies. Road fuel tax is simply going to become a declining and difficult revenue source. This begs the question whether a different form of road vehicle taxation would be more appropriate to 21st century environmental, transport and fiscal needs than the 20th century regime of taxing road vehicle purchase, ownership and fuel. Instead of taxing fuel, then taxing the actual use of roads would sidestep the problem.

The first steps are already underway as the UK is due to introduce a GPS-based distance charging system for heavy goods vehicles in 2008, including a differential change for motorways and other roads. This will not replace Fuel Duty, but VED on lorries, and follows a trend set by Germany, Austria, New Zealand and Switzerland for distance/weight based systems to replace circulation taxes.

The first major UK study to advocate national road user charging was a report by the UK Commission for Integrated Transport *Paying for Road Use* (Dodgson *et al.*, 2002). This report was quickly followed by the Independent Transport Commission's report, *Transport Pricing* (Glaister and Graham, 2003), which showed how taxes on road use would produce substantial user benefits and significant cuts in congestion. An earlier study in the Netherlands explored the car use and environmental impacts of replacing car purchase, annual, and fuel taxes with four variations of a fiscally neutral kilometre charge (Ubbels *et al.*, 2002). Their results suggest that

a different tax regime would be more effective in stimulating behavioural change than reforms to existing car taxation measures. Redistributing fixed taxes to a kilometre charge resulted in a modelled reduction in car traffic for the four alternative charging systems of between 18 percent and 35 percent compared with the 'business as usual' base case. Additionally, this study indicated that growing frontier effects in the EU were reducing the effectiveness of traditional car taxation measures.

Even the state of Oregon in the USA is in the process of developing a 'Road User Fee' for introduction in 2007. Neighbouring states are also interested in using the system. The main motivation for Oregon's action is the decline in fuel tax revenues. It includes a novel 'opt-in' charging method, although the road user fee will eventually totally replace fuel tax. Drivers can choose to have an on-board distance-charging unit fitted to their cars. Fuel tax is substituted by the distance charge if a charging unit is detected at filling stations (Oregon Department of Transport, 2004). The Oregon example in particular shows that the replacement of the current car taxation regime has long-term structural causes. A tax regime change to a car road user charge is occurring, or being seriously considered, in societies as contrasting as a rural state in the USA, the Netherlands, Switzerland and the UK.

Designing a National Road Pricing System

We are now entering a new phase of transport policy fiscal instruments. Rather than reforming existing measures, the UK, and several other nations, are moving towards replacing the whole transport taxation regime. Yet there remains some confusion as to what policies this new tax structure should serve. The 2004 White Paper indicates that, sometime after 2015, all cars would be fitted with GPS-based charging instrumentation. VED and Road Fuel Duty would be replaced by a mileage charge, varying from 3p per mile up to £1.50 for exceptionally congested places.

This design for a national road user charge suggests that congestion reduction is the dominant function in mind. If congestion is the principle criteria for varying the charge, we will sweep away the existing incentives for fuel efficiency and promotion of new cleaner fuels. Fuel Duty

inherently promotes fuel efficient vehicles, and a lower tax on cleaner fuels provides a further incentive. This is reinforced by the CO_2 charging bands for VED. But if a new clean fuel car faces the same congestion charge as a large gas guzzler, what incentive will there be for 'going green'?

A second major point is that any action is many years away because, to address congestion, a highly sophisticated GPS system is needed. Other nations have opted for more quickly-implemented interim schemes. These are simpler, and currently charge only by distance driven, but could be upgraded later to incorporate congestion. Staged measures allow for adjustments and corrections. A 'big bang' introduction of a substantial technical and highly political measure is risky. In the meantime, all the transport trends continue to head in the wrong direction, making an even more difficult task when the tax reform is eventually introduced. It is as if there is no urgency to address congestion in Britain.

The above problems can be addressed. The *Transport Taxation Futures* project included modelling alternative national road pricing systems and examined the use of a banded distance charging system. Banded tax systems have proved to have a strong, if not stronger, psychological effect upon car users (e.g. the CO_2 bands in the company car tax reforms).

One scenario in the ESRC study involved a simple distance charge (which does not require GPS technologies and so could be introduced quickly) with a three-band kilometre charge system for cars of 4p, 7p and 14p per kilometre. The bands were based on the UK's existing VED 'A-D' system. This is not a particularly steep grading, but was used as there were data available in these categories so as to explore what could be done using a simple system. The modelling exercise estimated this would cut CO_2 emissions by around 10 percent compared to retaining the existing tax system and car traffic by 14 percent. In practice a more strongly-differentiated banded system (with much higher charges for high emissions) would be involved.

A congestion charge could be added on top of these rates, which would take the highest rate up to £1 per kilometre for driving the least environmentally-friendly car in highly congested conditions (e.g. city centres in peak hours).

Dilemmas of Regime Change

As is apparent in at least one other important area, it is vital not just to have regime change, but to get that regime change right. The role of demand management in UK transport policy seems to be at a crossroads. There remains a rhetoric and acceptance of the need for effective demand management, yet politically the agenda is shifting towards the safer ground of prioritising congestion relief. But it is not only impossible to address congestion without demand management, there is a real danger that a congestion-centric transport policy will jeopardise a decade of environmental transport policy reforms. This is well illustrated by examining the proposed development for national road pricing.

The ESRC *Transport Taxation Futures* study suggests that an approach integrating environment and congestion concerns is possible. A phased introduction of a road pricing system could be developed retaining and enhancing the current incentives for cleaner vehicles and fuel as well as encouraging a shift to shorter trips and travel by more environmentally-friendly forms of transport. Such a phased eco-reform could start modestly and quickly, to allow motorists to adjust to the idea of a general road user charge, and then proceed via incremental changes as technology and policy needs evolve. The trouble with a 'big bang' introduction of a perfect system in 10-15 years' time is that, given the politically problematic nature of transport policy, effective action may well always remain 10-15 years in the future.

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