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Limiting car use through controls on private parking providers: A study of worldwide policy options

Dr Marcus Enoch* and Dr Stephen Ison**

Department of Civil and Building Engineering, Loughborough University, Leicestershire LE11 3TU.

Abstract

Controlling parking provision has long been recognised as one of the most effective mechanisms for reducing car use. But in many countries, local transport authorities have only been able to influence the price and availability of parking spaces under their direct influence, while a significant proportion of parking spaces owned by other agencies (e.g. 50% of off-street spaces in the UK) have remained uncontrolled.

The aim of this paper is to review the problem and the range of policy instruments currently utilised throughout the world where private parking spaces are controlled by Local Government to examine how the use of such policy options might be utilised more extensively and effectively. To achieve this the paper draws on a number of vignettes based on an extensive review of the literature and structured interviews with key stakeholders responsible for implementing the policy instruments discussed.

It concludes by suggesting that while the control of public parking spaces by pricing and regulatory means is now widespread there still remains scope for reducing traffic movements by 'encouraging' private providers to reduce their parking provision.

Keywords: Parking, Policy, Transport Demand Management

The nature of the problem

There are more than 23 million cars in the UK and on average these are parked for 22 hours a day. Most will occupy more than one parking space every 24 hour period since every car journey begins and ends with a parking space and this suggests that nationally around 35-40 million spaces are required, taking up some 700 square kilometres or 0.3% of the total land area of Great Britain (Informa Publishing Group, 1996). A current 'best guess' of those involved in the parking sector in terms of the total number of parking spaces in the UK is that the real number of parking spaces equates to around four or five spaces per car (Moran, 2003), or in the region of 100-120 million spaces, which would seem to equate to around 1% of the land area of England, Scotland and Wales. Clearly the provision of car parking spaces represents a use of scarce resources and stricter control

* Tel: +44 (0)1509 223408; Email: m.p.enoch@lboro.ac.uk.

** Tel: +44 (0)1509 222605; Email: s.g.ison@lboro.ac.uk.

would not only free-up land for other uses but would also limit car use resulting in beneficial effects in terms of the level of congestion and traffic-related pollution.

Controlling access to parking spaces has long been considered as one of the most effective tools at the disposal of local authorities to reduce car use. For example, in the UK, the seminal *Buchanan Report* (UK Ministry of Transport, 1963), stated that “everything points to the immediate importance of parking policy”. It continues:

“It appears absolutely essential that if the public authority should retain complete control of the amount of parking that is provided; its location; and the charges that are levied; and it should be prepared to use this control methodically as part of the implementation of the transportation plan.”

UK Ministry of Transport (1963)

More recently in the UK, a national survey of Local Government Councillors and Officials and Transport Academics, undertaken by Ison (2000) revealed that parking charges are perceived as one of the most effective methods of dealing with traffic congestion in towns and cities of the UK. In fact 73.2% of respondents viewed a doubling of parking charges in urban areas to be totally or fairly effective at reducing congestion. This ranked alongside an improvement in the frequency and reliability of public transport, the development of a land use and transport planning strategy, the implementation of road user charging and a banning/restriction of vehicles in central areas, which were seen by respondents to be 77.4, 80.8, 81.6 and 87.4 per cent totally or fairly effective, respectively.

Typology of parking control

Parking policies can only be applied to spaces where a local authority can exert some form of control, be it regulatory or fiscal. The following Table provides a categorisation of the types of parking to be found in the majority of urban areas .

Table 1 Typology of car parking spaces

Ownership of car parking spaces:	Users of spaces:	On-street or Off-street
• Local authority controlled	• General Public	• On street
	• General Public	• Off street
• Privately owned	• General Public	• Off street
	• Private Non Residential Parking	• Off-street
	• Residents	• Off street

Publicly owned parking is provided by the local authority and can be classified as being either on-street or off-street. Of these, off-street is in many respects the easiest to control through rationing spaces and altering prices – generally with the object of encouraging shoppers but discouraging commuters. More complicated is the issue of on-street parking.

Here, the removal of spaces has the dual effect of making the road wider and limiting the number of points where vehicles can terminate their journey. Control of on-street parking is not without its problems, not least in terms of enforcement, as illegal parking can reduce the effectiveness of the policy. Finally, there is often an uneasy tension in parking policy between the objectives of local economic development and vitality, raising revenue from the parking charge and parking as a transport demand management measure. Implementing parking policies on publicly controlled spaces is difficult enough, but at least the ways and means to do this are widely known and understood. This is not the case with privately-owned spaces.

As can be seen from Table 1, privately-owned spaces can be categorised by the type of user:

- those that are provided for use by the general public (or organisations for a fee) by companies such as NCP, BAA, or other car park operators;
- those for use by particular groups non-residential (employees, visitors and users or customers); and
- those for use by residents.

The problem is that local governments in many countries throughout the world have historically required developers to provide adequate parking to serve the new developments as a condition of receiving planning permission since the 1950s with the consequence that a sizeable proportion of the existing off-street car parking spaces in towns and cities are privately owned and controlled. In Cambridge, UK for example, there are 40,000 private non-residential parking spaces 17,000 of which are in the central area. While this ‘minimum parking’ requirement policy approach has been addressed in recent years¹ such that councils now have an element of control over *proposed* private parking spaces through the planning process, in only a few cases is the problem of *existing* privately owned parking spaces being tackled by local authorities. This paper aims to examine such cases and determine any lessons that may be of relevance to transport planners and decision-makers.

Parking control mechanisms

There are essentially three mechanisms available for targeting private parking providers namely via:

- Information and exhortation;
- Regulation; and
- Financial incentives.

As a means of detailing the three mechanisms a number of vignettes have been selected with the specific aim of illustrating the diversity of contexts.

¹ DfT (2002) provides details on how local councils can significantly influence private parking provision during the planning phase of a new development (or on alterations to an existing one).

Information and exhortation

This is the simplest approach to influencing private parking provision and involves furnishing providers with information on the parking problem and in particular details on just how expensive it is to provide and maintain each car parking space. The intention is to change organisational perception by appealing to their 'commercial rationale'. To date, such information has generally been provided to companies through organisations such as the Association for Commuter Transport, European Platform on Mobility Management, Transport 2000 promoting 'Mobility Management', 'Transportation Demand Management' or 'Travel Plans' (terminology applies in continental Europe, USA and UK respectively), and through Government initiatives.

For example, the UK Government report '*The benefits of Green Transport Plans*' (DETR, 1999) meanwhile, provided a number of cost estimates. The Report notes for example that Hewlett Packard estimated each surface parking space to cost £800 to build, plus £111 a year to maintain at its site on the edge of Bristol, while Halifax Plc work on figures for providing parking of £509 and £771 per space in Halifax and Leeds respectively. AstraZeneca estimated the annualised cost per surface space as being £400, and reported that the cost of building a multi-storey space was £6000. Rather less typical, Newton Dunn (2002) reports that a single space in a car park in Mayfair in London recently sold for £65,000.

Transport Energy (2003) notes that elements contributing towards the cost of parking include security, lighting, CCTV, signing, parking barriers, pay and display machines (and the cost of collection from the machines and enforcement), tarmac, white lining and car park maintenance. It also points out that companies need to consider the land acquisition or opportunity cost of the land, the rent or notional value based on the construction cost and business rates.

One other approach that is currently being considered by the UK Commission for Integrated Transport on behalf of the Department for Transport, is the idea of separately displaying amounts businesses pay for parking from the rest of the business rate. Interestingly, the information already exists, and companies can request to see it, but a nation-wide system would require software changes and perhaps need primary legislation which represents a significant barrier.

Regulation

This section affords a number of vignettes of locations where regulation has been used in order to impinge on private car parking provision.

Parking Places (Parking Garage) Law, Japan

One mechanism aimed at residential as opposed to non-residential spaces occurs in Japan, where the Garage Law (Parking Places Law) means that before anyone can buy a car, s/he must have a registered parking space and submit certification of such (shako shomeishou) to the authorities declaring the existence of such a space (Gaijin Pot, 2002). This law was introduced in December 1958 and requires each vehicle to have its own fixed and exclusive garage or other space sufficient to accommodate it. In addition, the parking space has to be within two kilometres of the car-owners residence.

During the 1970s, this concept was applied to Heavy Goods Vehicles in Singapore because there were insufficient parking spaces. Now, when licences are renewed, the owner must produce a vehicle parking certificate (VPC) (Chan et al, 2002).

Mandatory Parking Cash Out Program, Santa Monica, California

A different approach used in Santa Monica, California, involves the local council introducing a mandatory Parking Cash Out program (United States Environmental Protection Agency, 2000). This applies to firms with 50 or more employees that have at least one work site located in the South Coast Air Basin area and who:

- do not own their own parking (normally this means parking is leased);
- subsidise employee parking (i.e., pay all or part of the cost of parking for any employee);
- can calculate the out-of-pocket amount paid for subsidised employee parking (e.g., parking costs are unbundled, or separated in the lease agreement); and
- can reduce the number of parking spaces leased without penalty (e.g., without having to break the lease or pay for unused spaces).

Such employers are required to offer all eligible employees the option of a cash allowance equivalent to the parking subsidy in lieu of subsidised parking. Eligible employees are those to whom a subsidised parking space is available, even if it is not used. The parking subsidy is equal to the out-of-pocket amount paid by the employer for employee parking minus any contribution by the employee and any commute-related subsidies otherwise given to the employee (e.g., for mass transit or ridesharing). Employees have the choice of foregoing the cash offer and continuing to receive subsidised parking or accepting the offer and either paying for parking themselves or finding an alternative way to commute to work. Santa Monica recognises Parking Cash Out for its contribution to overall trip reduction and to the emissions reduction requirements of the areas Clean Air laws.

Parking Freeze Plans, Boston, Massachusetts

The Boston Parking Freeze was implemented in the mid 1970s by the Federal Environment Protection Agency as one element of a comprehensive strategy to help reduce traffic emissions in the Boston Region. Initially, the freeze affected only commercial parking in particular areas (such as Logan Airport), but the types of parking now include all off-street motor vehicle parking spaces and the areas affected have steadily spread to areas such as Cambridge, the City of Boston, East and South Boston. The policy was introduced and is monitored by the Boston Air Pollution Control Committee, a board of the City of Boston Environment Department. Elsewhere, Portland, Oregon also capped its downtown spaces in 1975, but increased the number of spaces during the 1980s (City of Boston, 2001).

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Area Parking Quotas

Closely related to the Boston parking freeze idea, is the concept of commercially trading spaces within such areas. While not actually implemented anywhere (as far as the authors could ascertain) the idea was examined in a study for the UK Department of the Environment, Transport and the Regions in 1999 (Mills, 2003). This would see local authorities setting a maximum number of licenses for their area based on how much traffic it was able to sustain. Once set, the upper limit of parking supply would be fixed, but parking licenses would be exchanged between different businesses and developers. This may be done through a 'parking broker', which could be set up as a franchise operation and run commercially. This broker would register and monitor the spaces, ascribe market values to them, and would take a commission for each sale. It could also take on responsibility for enforcing the licenses and fining offenders. Existing owners would not need to purchase licenses at the start of the scheme but would register their asset for free. Meanwhile new developments would be able to have as much parking as they desired, providing they could afford to buy the necessary licences.

Financial incentives a) Direct parking levies and parking taxes

The most obvious use of the fiscal system is to impose some form of direct tax or levy on parking. This section considers examples where local authorities have imposed fees on commercial parking operators, and details examples of where organisations offering free parking have been required to pay some kind of levy on parking spaces.

The Perth Parking Licence Fee

Perth, Western Australia is one of the most car dependent cities in the world. In 1996, 91% of households in the State had at least one registered motor vehicle, and four fifths of all journeys were car-based. In addition, two thirds of commuters to the central business district drove to work and currently, there are 679 vehicles of all types registered per 1000 people. This compares to 481 vehicles per 1000 people in the UK.

In order to address this level of car dependency, the State Government of Western Australia, in partnership with the City of Perth, first looked at introducing a new approach to parking management for the Perth CBD in 1991. A workplace parking levy or 'parking licence fee' was identified as one of a number of measures that could form part of the Perth Parking Policy ensuring improved access. It was not until 1999 however that the licence fee scheme became law.

Overall, the Perth Parking Policy and the Perth Metropolitan Transport Strategy aim to achieve modal shift, increasing vehicle occupancy, limiting the social and environmental impacts of the car and providing more short-term parking for visitors to the city. In addition to the parking licence fee, the Strategy has increased spending on public transport services and infrastructure and led to tighter parking controls on new developments. The objectives of the parking licence fee and approach taken and not dissimilar to those adopted in the UK.

The approach taken is that all parking (both on-street and off-street) within the Perth Parking Management Area is licensed, with the exception of private off-street residential.

Thus the parking licence fee is a private-non-residential parking levy rather than only applying to the workplace.

In addition, small businesses with less than six parking licence fee liable bays on their property are required to licence their parking but are exempt from the parking licence fee. The reason for this is so that the scheme can be monitored and enforced more effectively. In total, these exemptions applied to around 6,000 of the 58,500 licensed spaces, of which 4,000 were exempted on usage grounds and the remainder due to the 'small business' rule. In practice, it is the tenant that pays the parking licence fee and it is common practice to have a clause in a tenancy agreement that the owner can pass on any government charges or taxes.

Legally the licence fee is a tax, for which property owners rather than tenants are liable, due to them being less mobile, easier to trace and being fewer in number. Under the 1999 legislation, the rate per space was set at \$A70 (£25²) per year when introduced in 1999. This was increased for the 2001/02 licence year to \$A120 (£43) a year (pro rata). To enforce the parking licence fee, the legislation allows authorised inspectors to enter property and demand records.

In Perth, the money raised must be spent on improving the access and amenity of that area and as a result it is earmarked to fund the Central Area Transit (CAT) bus system. It is believed that this clear link between charge and benefit is why the expected opposition to the fee did not materialise. Around 80,000 people a week use the two state-of-the-art CAT services.

To encourage property owners to reduce the level of parking for some of the year and to make the fee more acceptable, owners can vary the number of licensed spaces provided, they advise the Government of the change in advance. Thus property owners pay only for the spaces they use, not for the spaces they could potentially use.

When faced with the parking licence fee, developers, property owners and their representatives were, and still are, opposed to the scheme. Particular concerns relate to the fact that businesses would be forced out to regional centres where the parking licence fee did not apply, that the rights of inspectors to enter property and demand records were excessive and that the restrictive aspects of the parking policy should not be applied retrospectively to existing parking facilities. There were also worries that licence conditions might be changed or licences not renewed and that leasing parking from vacant buildings would be hindered. Finally, it was feared that in the future, the licence fee being insufficient in itself to cut car usage, would be increased to extremely high levels leading to increased parking user fees that in turn would reduce car based trips to the CBD.

Responding to these concerns, the Government agreed that the licensing regulations would not be applied retrospectively. This means that property owners who operated in accord with their historic planning approvals could continue to manage their parking in that way.

² £1 = \$A2.8.

Overall, 56,300 spaces were licensed during the first year of operation, generating \$A3.35m (£1.2m). Non-payment at \$A65,000, was less than 2% of the total due. Parking supply fell by nearly 10% and there are 6,000 fewer spaces than recorded in a 1998 parking survey. Most of the spaces taken out of use were situated near the edge of the Parking Area and remote from areas of high parking demand. There is also evidence that small businesses were decommissioning spaces to meet the five spaces or less exemption, and that property owners are far more likely to act to stop people illegally using their spaces.

In terms of compliance, by 1 January 2000, the deadline for initial licence applications for the 1999/2000 year, around 55% of bays had registered. During the subsequent six months, Government officers approached the remaining property owners. As of May 2001, when the Government shifted from the education and information approach to an enforcement-led regime, around 30 property owners with about 300 spaces remain to be licensed. These businesses face substantial fines if prosecuted. One other compliance issue, is that the increased awareness of property owners regarding parking has led to better management of spaces and less 'wasted' bays.

A number of lessons emerge from the Perth case. First, the system should be simple to understand and that as much information as possible should be supplied so as to educate businesses as to why the parking licence fee was being introduced. Secondly, the parking licence fee was just one part of a whole package of parking measures and public transport improvements and crucially the link between the introduction of the parking licence fee and the improvement in public transport in the central area was vigorously promoted from the beginning. Finally, it is clear that targeted exemptions helped improve acceptance of the parking licence fee among businesses.

Overall, the level of the parking licence fee imposed on businesses is very low and even though it is spread over a broad base of liable payers, the sum raised is relatively small.

Parking Space Levy, Sydney, New South Wales, Australia

A second Australian scheme, the Parking Space Levy (PSL), operates in Sydney and was first introduced in the Sydney central business district and North Sydney on 1 July 1992. According to the Parking Space Levy Act of that year, the aim of the levy

“...is to discourage car use in business districts by imposing a levy on off-street commercial and office parking spaces... and by using the revenue so raised to finance the development of infrastructure to encourage the use of public transport to and from those districts.”

(Parking Space Levy Act, 1992)

Under the Act, businesses were required to pay \$A200 (£70) per parking space per year until July 1997, when this was increased to \$A400 (£140) per space per year – much higher than in Perth. As of May 2000, the “Parking Space Levy Amendment Bill 2000” increased the rate further to \$A800 (£280). It also extended the levy to four other business districts in Sydney, namely Bondi Junction, Chatswood, Parramatta and St Leonards. This also introduced a zonal system, with these new business districts being referred to as Category 2 areas, with a lower levy per space per year of \$A400 (£140). Sydney CBD and North Sydney are now referred to as Category 1 areas. However, there are several

categories of spaces that are exempt from the charge. These include spaces designated for registered disabled people, residents, charities; or for loading/unloading bays. Parking Space Levy fees are collected by the NSW Office of State Revenue (OSR) on behalf of the NSW Department of Transport. Any business within one of the six designated PSL areas must register with OSR and make PSL payments to OSR on the basis of their liability.

Unlike in Perth, the PSL applies only to off-street private parking used by tenants of commercial office buildings and requires the owner to pay a tax on all parking spaces on their property regardless of whether they are used or not. A further important point is that all public car parking is exempt.

Interestingly, the terms of the Act allow the revenue to be spent only on infrastructure and maintenance, and not on subsidising operations. Although this is seen as being restrictive, there is also a counterbalanced view that this provision does help prevent the levy being used to replace public transport funding from general funding sources. As a result, the funds raised from the charge have been spent on improving car parking and public transport infrastructure.

The revenue collected since the introduction of the Levy in 1992 have been highly variable, but has been mainly influenced by the increase in the levy charge per space, the extension of the scheme in 2000 and by new development within the PSL areas. Money raised in the 2000-2001 financial year is expected to be in the order of \$A40m (£14.3m). A major issue has centred around how much to charge – spend too little and car use will not be affected, but spend too much and businesses think of relocating or closing – and exemptions. In particular, there is disquiet that retail car parks in Category 1 areas are not exempt, whereas in Category 2 they are. So far, no action has been taken, as the Government regards this as a characteristic of the two areas.

The Sydney levy raises significantly more money than that raised in Perth – ten times more – while the levy charged is also significantly higher. The other major difference between the schemes is the narrower base from which money is raised in the Sydney case. This may indicate that the Sydney levy has become accepted as a ‘fact of life’ among businesses there, allowing increases to be made with relatively little opposition. Meanwhile the approach used in Perth has been to spread the burden as widely as possible to allow more acceptable ‘lower charges’ to be applied.

Parking Places (Surcharge) Singapore

Singapore is universally known for its radical transport demand policies to reduce vehicle use and ownership levels – in particular the Electronic Road Pricing and Vehicle Quota System. However, what is less well known is that until the late 1990s, parking policy in Singapore was a key element in the national traffic management strategy to manage traffic levels in the city centre and encourage public transport use (Chan et al, 2002; Singapore Statutes Online, 2002). Specifically, the Parking Places (Surcharge) Act of October 1975 charged a monthly fee of \$S60 a space on non-residential parking. This raised \$S40m a year which was paid into the general government revenue account. With the introduction of the Electronic Road Pricing Scheme in 1998 and the Certificate of Entitlement scheme (whereby the number of cars in Singapore is effectively rationed) combined with the severe economic recession however, control of parking was relaxed and is now seen as being relatively less important. Despite this, a nominal \$S1 per space per month licence fee

is still collected and raises in the region of \$1m a year. The Land Transport Authority pays the Urban Redevelopment Authority around \$30,000 a month to administer it.

Other proposed levies

Several other cities have considered, or are considering adopting some form of parking levy. For example, Translink, the regional transport authority of Greater Vancouver in the west of Canada recently published a draft report looking at implementing either a parking surcharge or a parking space or area levy (Translink, 2003) and the position is seemingly under an almost continuous review in Dublin, Ireland. Rumours also suggest that Chicago and Kuala Lumpur have studied implementing a levy on private parking spaces. It is in the UK however that the most progress has been made.

In Britain, the workplace parking levy was first proposed by the UK Government in the consultation document '*Breaking the Logjam*' in 1998. It became law in England and Wales as part of the Transport Act (2000) but in Scotland the workplace parking levy option was abandoned. The levy provides local authorities with optional powers to charge organisations according to the number of employee parking spaces available on their premises.

While initially there was a great deal of interest in the levy, not least because of its associated hypothecation for improving transport infrastructure, enthusiasm for introducing the workplace parking levy among local authorities has since cooled. For example, in the West Midlands, the seven local authorities were initially interested in introducing the levy but they have subsequently become less enthusiastic. In fact, even Birmingham City Council, the prime mover in the plan, has now dropped the idea entirely. In Nottingham, the City Council is also struggling to convince businesses of the benefits the levy would achieve.

The lack of support is based on a number of factors. Firstly, there is opposition among businesses concerned that new companies may be put off moving into their area when faced with additional costs. Second, there is concern that existing companies might relocate elsewhere. Third, there are fears that the levy will be difficult and expensive to administer and that the measure will be seen as unpopular politically. Finally, the delay in implementing legislation seems to have weakened the political momentum in terms of introducing such a potentially controversial transport policy.

Parking charges and levy, Heathrow, Gatwick and Stansted Airports, London, UK³

A variation on the parking levy is that of a commercial company (BAA) rather than a local authority imposing a levy on staff parking to companies based at its airports of Heathrow, Gatwick and Stansted, with a proportion of the parking charges paying for improvements to public transport. At these airports, £12 (€14) of the annual staff car parking pass at Heathrow, Gatwick and Stansted, is earmarked to improve public transport access. In addition, passengers contribute an average £0.25 (€0.35) for every parking transaction. This is credited to a BAA budget that goes towards improving public transport within and

³ Based on Lamb (1999)

around each specific airport. The idea for introducing a dedicated parking levy first arose at BAA during 1995, while a national debate on motorway tolls was underway. Following this, the average £0.25 (€0.35) charge on passenger parking was introduced at Heathrow in April 1996, with Gatwick following in June 1998 and Stansted in July 1999. The staff levy was introduced at Heathrow, Gatwick and Stansted in 1999. The majority of employers on the airport sites, however, do not pass any of the cost of car park passes on to their staff. They thus have limited transport effect upon the travel behaviour of individuals. The ‘polluter-pays’ effect is therefore all but eliminated.

Commercial Parking Tax, San Francisco, California, USA

Parking taxes, as opposed to parking levies, apply to revenues raised by private car parking operators. Perhaps the best known example occurs in San Francisco, where the City Council imposes a 25% tax on all commercial parking transaction that is any rent or charge required to be paid by the user or occupant of a parking space. The city collects nearly \$US50 million annually from this tax and expects this revenue to increase if parking operators implement better revenue control systems. Revenues are divided between the city’s general revenue and senior citizen funds (Litman, 2003)⁴. Similar mechanisms exist in Baltimore, New York, Pittsburgh and Washington DC (KT Analytics, 1995).

Local Options Parking Tax, Washington State, USA

As of 1999, only two jurisdictions in Washington State collect the Local Options Parking Tax (WSCTR, 1999). Bainbridge Island raises \$US100,000 a year from its ferry terminal operation, while the revenue collected by Sea-Tac is closer to \$US4.6m, of which 85% comes from the Port of Seattle which operates the Sea-Tax International Airport garage. The money raised is earmarked to pay for transport improvements and the tax can only be applied to commercial operations and does not apply to free parking.

Financial incentives b) Indirect mechanisms

In addition to the direct methods already described, there are a number of more subtle approaches that Governments and local authorities might use to ‘encourage’ organisations to reduce their reliance on private parking places. For instance, both the Irish and UK Governments have considered the idea of implementing Differential Rating of Car Parking Adjacent to Business Premises so that the cost of parking spaces becoming relatively more expensive might have the same effect as a parking space levy or tax but without the need for a separate administrative and enforcement regime. Or, Governments might look at charging VAT on private parking spaces if they do not already do so⁵. Finally, in Britain the personal tax regime has been seen as the major barrier facing companies in the UK wishing to introduce a ‘parking cash out’ system (whereby employers offer their staff a financial inducement not to drive to work), as the incentive is currently treated as a benefit-

⁴ Further information can be obtained from Trevino (2003), City and County of San Francisco (2001), and San Francisco Municipal Code (2001).

⁵ The current VAT position of car parking in the UK is stated in Section 4 of Notice 742 on Land and Property, (HM Customs and Excise, 2002).

in-kind by the Inland Revenue⁶. Interestingly, this tax problem was also the case in the United States, until it was removed by the 1998 Transportation Equity Act, which altered the tax code and made parking cash out schemes tax deductible to the employer and tax free to the employee. This Act extended measures first enacted in the 1992 National Energy Policy Act, which had allowed employers to provide each employee who commuted on public transport a benefit up to an initial limit of \$US60 per month (\$US720 per year). The 1998 Act also increased the non-taxable parking cash out, public transport and vanpool benefit ceiling to \$US100 a month from January 2002, with the resumption of increases indexed to inflation.

Lessons to be learnt

Whilst the control of public parking spaces by pricing and regulatory control has widespread implementation the case studies there still remains scope for reducing traffic movements by encouraging private providers to reduce their parking provision. Given that the influence of private parking providers via information and exhortation is likely at best to be a long-term strategy then regulation and financial incentives are likely to be the way forward. The examples presented of 'Parking Garage' from Japan and mandatory 'Parking Cash Out' and 'Area Parking Quotas' from the US reveal that such measures are possible, if somewhat small scale.

In terms of financial incentives then the case studies present a number of ways in which this measure can address the issue of privately owned parking spaces. Local authorities throughout the world have been able to impose a financial regime with some success. The use of the workplace parking levy can be demonstrated to work at a local level, providing certain conditions are met. Crucial among these, are that businesses should be informed (and ideally involved) in the implementation process as much as possible, and that there should be a clear link between the levy and positive highly visible improvements to the transport alternatives to the car. They also show that employers become involved and take an interest in how their employees travel to the workplace, administration can be reduced if smaller companies are exempted and that targeted exemptions can be used to make the car parking schemes more acceptable. Further, workplace parking levies will only work if the scheme takes place in a location where effective parking controls are in force, and where public officials are empowered to access and monitor activities in privately-owned car parks.

But there are also negative effects. Firstly, employers will almost certainly absorb the charge in most cases and will not pass it on to the end users⁷ – necessary if a sizeable modal shift from the car is required. A further small proportion of those employers will de-commission some or all of the parking. Secondly, there are liable to be difficulties where a group of employers share the same car park.

And then there is the 'beggar my neighbour' effect, whereby employers may be encouraged to re-locate either to out-of-town locations, or to neighbouring towns that do

⁶ For more information on UK parking cash out experience see Enoch (2002).

⁷ One notable exception is at Boots in Nottingham, which has stated that it will actually expect its staff to pay the charge.

not impose the levy to cut costs. This is one issue of rather less importance in the Perth and Sydney cases than it would be in the UK. A section in *Transport in the Urban Environment* by the Institution of Highways and Transportation succinctly expressed this.

‘As with many other demand management measures, competition between adjacent localities for economic strength can seriously reduce the effectiveness of well-intended policies. Given the choice between accommodating the requirements of a major project, which will enhance the local economy, by relaxing their more stringent policies or maintaining those policies and seeing the project go elsewhere, many authorities will opt for the former. While a firm national, or regional, policy framework might help to avoid such ‘bidding’ situations, it would be at some cost to local autonomy on key decisions.’

IHT (1997)⁸, pp.293

In addition, while originally proposed as a levy on private-non-residential spaces, the scope of the legislation in England and Wales was subsequently limited to workplace employee parking only. The social and environmental impacts associated with other PNR parking thus remain unaddressed⁹.

One alternative to the workplace parking levy to overcome this, would be to develop the existing Business Rate as it applies to employee car parks into a policy instrument that would fulfil much the same purpose as the workplace parking levy and could also address other PNR parking as well. As mentioned earlier, this is the solution currently favoured in Dublin. Such a mechanism could range from an information measure (identifying and highlighting separately the cost of providing car parks and the rates paid on them), through to changing the valuation system to reflect the real social and environmental cost of car parking.

Important advantages of this reform over the workplace parking levy are that:

- 1) If introduced on a national basis it would address the ‘beggar my neighbour’ problem of the workplace parking levy.
- 2) It would be an ‘eco-reform’ of an existing measure and not the imposition of a new tax. It could be introduced in a revenue neutral form.
- 3) The system is already in place across the whole UK, involving little administrative change or uncertainty. Databases for areas and rateable valuations exist.
- 4) It could be used as either an informational measure or an economic instrument.
- 5) It could have a staged introduction.

This could be modified so that one rate would be charged for building premises, and another for the adjacent area of car parking, thus providing an incentive for building or car park owners to de-commission parking spaces.

⁸ Institution of Highways and Transportation (1997) *Transport in the Urban Environment*, IHT, London.

⁹ It should be noted that the Government has pledged to revisit this issue, and is considering extending the provisions in the 2000 Transport Act to other PNR spaces (Parking Review, 2003).

Finally, a key problem is that employers generally do not pass on the costs of parking to their staff and therefore it may be that the effect of such organisation focused measures are rather limited. nevertheless it is a gap that needs to be addressed.

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References

Chan S H, Wong K and Lim L C (2002) Interview, Land Transport Authority, Singapore, 5 July.

City of Boston (2001) South Boston Parking Freeze Plan, Boston Air Pollution Control Commission, Department of Environment Protection of the Commonwealth of Massachusetts, Boston, MA. Visit <http://www.cityofboston.gov/environment/pdfs/final.pdf>.

City and County of San Francisco (2001) Parking Tax, Understanding Business Taxes, Office of the Treasurer and Tax Collector, City and County of San Francisco, Leaflet, San Francisco, July.

Department for the Environment, Transport and the Regions (1998) Breaking the Logjam: Consultation on Traffic Congestion, Road User Charging and Workplace Parking Charges, Department for the Environment, Transport and the Regions, London, October.

Department for the Environment, Transport and the Regions (1999) The Benefits of Green Transport Plans, Department for the Environment, Transport and the Regions, London.

Department for Transport and Office of the Deputy Prime Minister (2002) Using the planning process to secure travel plans: Best practice guidance for local authorities, developers and occupiers, Department for Transport, London, July.

Enoch M P (2001) Workplace parking charges Down Under, *Traffic Engineering and Control*, Vol.42, No. 10, November, 357-360.

Enoch M P (2002) UK parking cash out experience, and lessons from California, *Traffic Engineering and Control*, Vol.43, No. 5, May, 184-187.

Gaijin Pot (2002) Japan Guide: Transportation, Gaijin Pot. Visit <http://gaijinpot.com/e/transport.php>. Last accessed January 2003.

Gourd (1999) Personal communication, City of Hamburg Building Department, Hamburg, Germany.

HM Customs and Excise (2002) Land and Property, HM Customs and Excise, Notice 742, London, March.

Informa Publishing Group (1996) Car parking and vehicle use, Automotive Environment Analyst, Informa Publishing Group, 1 July. Visit <http://www.web.lexis.nexis.com>.

Institution of Highways and Transportation (1997) *Transport and the Environment*, Institution of Highways and Transportation, London.

Ison, S, (2000) Local Authority and Academic Attitudes to Urban Road Pricing: A UK Perspective, *Transport policy*, 7, 269-277.

KT Analytics (1995) *Parking Management Strategies: A handbook for implementation*, Regional Transportation Authority, Chicago.

Kyodo News Service (2002) Dazaifu city passes Japan's first parking lot tax bill, Kyodo News Service, Japan Economic Newswire, 22 March. Visit <http://traveltax.msu.edu/news/Stories/kyodo2.htm>. Last accessed January 2003.

Lamb J (1999) Personal communication, Airport access manager, BAA Stansted, London.

Litman T (2003) Parking pricing: Direct charges for using parking facilities, TDM Encyclopaedia, Victoria Transport Policy Institute, Victoria BC, 11 November. Visit www.vtppi.org. Last accessed 3 December 2003.

Mills E (2003) Trading private parking on a common market, *Parking Review*, January, 25-26.

Moran M (2003) Telephone interview, Editor, *Parking Review*, October.

Nelson Nygaard Consulting (2001) Controlled access parking in Redwood Shores, Working Paper, Nelson Nygaard, San Francisco, April (unpublished).

Newton Dunn T (2002) £65,000 for a parking space, *Daily Mirror*, Saturday 24 August, London, pp.21.

Parking Review (2003) Government to revisit the out-of-town parking levy, *Parking Review*, Issue 139, June, p.1.

Ministry of Provincial Revenue (1993) Motor vehicle parking: Social Service Tax Act, Consumer Taxation Branch, Revenue Programs Division, Ministry of Provincial Revenue, Bulletin 105, Victoria, British Columbia, April. Visit <http://www.rev.gov.bc.ca/ctb/publications/bulletins/105.htm>. Last accessed July 2002.

San Francisco Municipal Code (2001) Third Party Taxes and Parking Tax Fund, Articles 6 and 9 of the Business and Tax Regulation Code, Part III, San Francisco Municipal Code, San Francisco.

Singapore Statutes Online (2002) Parking Places (Surcharge) Act 1975, Act 26, Chapter 215, 15th October, Singapore. Visit <http://statutes.agc.gov.sg>.

Translink (2003) Parking taxes: Rationale and Analysis of Alternatives, Translink, Vancouver, British Columbia, 19 November. Visit http://www.translink.bc.ca/files/temp/ParkTax_Draft.pdf.

Transport Energy (2003) A Travel Plan Resource Pack for Employers, Best Practice Guide, Transport Energy, London. Visit <http://www.transportenergy.org.uk/bestpractice/>.

Trevino L (2003) Personal communication, Manager of the Tax Administration Department, City and County of San Francisco, San Francisco, 19 February.

UK Ministry of Transport (1963) *Traffic in Towns; A study of the long term problems of traffic in urban areas*, Reports of the Steering Group and Working Group appointed by the Minister of Transport, Her Majesty's Stationery Office, London.

US Environmental Protection Agency (2000), *Examples of Commuter Choice Programs: Santa Monica Parking Cash Out*, Office of Transportation and Air Quality, US EPA, 11 May. <http://www.epa.gov/oms/transp/comchoic/waytogo.htm>. Accessed 15 August 2001.

Washington State Department of Transportation (1999) Local Government Parking Policy and Commute Trip Review, Commute Trip Reduction Office, Washington State Commute Trip Reduction, Olympia.