

Parking Taxes

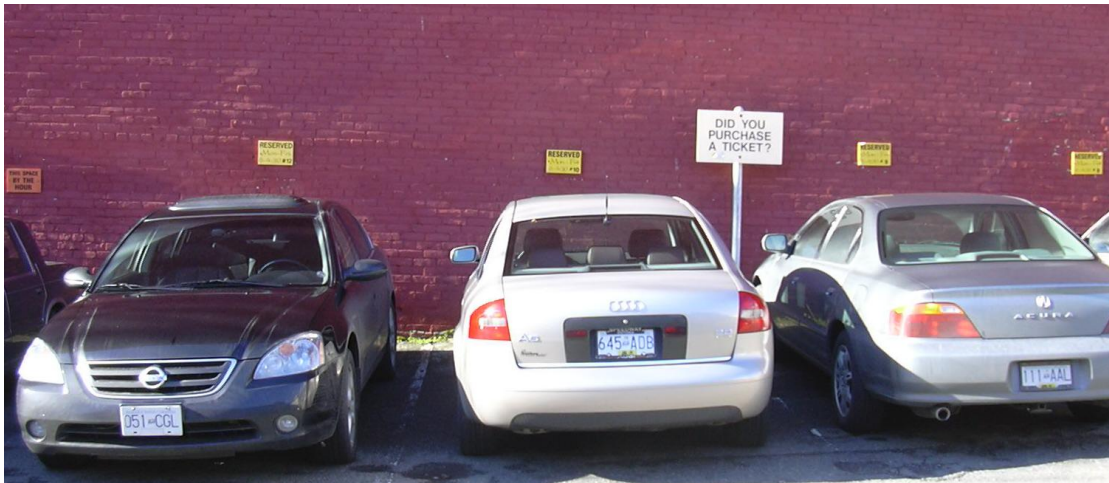
Evaluating Options and Impacts

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by

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Abstract

This paper describes and evaluates various types of parking taxes. *Commercial parking taxes* are a special tax on parking rental transactions. *Per-space parking levies* are a special property tax applied to parking facilities. Commercial parking taxes discourage the pricing of parking and concentrate impacts in a few areas. Per space levies distribute cost burdens more broadly, encourage property owners to manage parking supply more efficiently, and reduce sprawl. Although per-space levies are more challenging to implement they tend to support more strategic planning objectives.

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Introduction

Many experts advocate various types of transportation pricing reforms, including cost-based fees and taxes for the use of roads and parking facilities (“Market Reforms,” VTPI 2005). Such reforms can provide *double dividends* by raising revenues and helping to achieve other planning objectives such as reducing traffic congestion, air pollution and sprawl.

Vehicle parking is particularly appropriate for reform (Shoup 2005). Current parking planning practices tend to favor generous parking supply and minimal parking prices, which have unintended and undesirable consequences: they increase development costs, reduce housing affordability, cause dispersed land use patterns (commonly called *sprawl*), and increase automobile travel which exacerbates various problems including traffic congestion, roadway costs, crashes and pollution emissions. As a result, many professional organizations and planners recommend parking planning and management reforms (Litman 2006a).

One such reform is to tax parking activities and facilities. Parking taxes can raise funds and help achieve various planning objectives, including more compact development and increased use of alternative modes (Feitelson and Rotem 2004). Because excessive parking supply has so many negative impacts such taxes can provide significant benefits, particularly in growing urban areas where problems are greatest.

There are also practical reasons to tax parking. Such taxes are an appropriate source of revenue for local governments and public entities such as port districts and business improvement associations; they impose costs on property owners and motorists in specific areas and so can be considered a fair way to finance local transport services.

This report evaluates various types of parking taxes and their impacts with regard to various planning objectives, including *parking supply* (how much parking is provided in an area), *parking prices* (whether users are charged directly for parking, and the price structure used), *travel patterns* (the amount of vehicle traffic generated and use of alternative modes) and *equity impacts* (how costs are distributed). It provides examples and guidelines for implementing such taxes.

Types of Parking Taxes

This section describes various types of parking taxes.

Commercial Parking Taxes

Many jurisdictions impose a special sales tax on commercial parking transactions, called an *ad valorem tax*.

Implementation

Implementation requires commercial parking operator to maintain reliable records of revenues or transactions. Some commercial parking operators may underreport their revenues to reduce their tax payments. To address this problem the city of San Francisco now mandates that operators use specific revenue control systems that provide a receipt to users and securely record transactions for auditing (City of San Francisco 2001). This has increased revenues and reduces auditing labor costs. Businesses that collect parking fees as an ancillary service (such as hotels and hospitals) may need to specially track such transactions for tax purposes, but this is generally easy using modern accounting systems.

Impacts

This tax tends to reduce the supply of priced (user paid) parking. It may reduce total parking supply in areas where a significant portion of parking is provided by commercial operators, and by making free parking more financially attractive to users it may encourage more parking to be unpriced. For example, without a tax a free parking space may be worth \$1,000 in pre-tax wages to an employee (what the employee would need to earn in pre-tax wages to pay for the parking directly), but with a 20% tax it becomes worth more than \$1,200. As a result, employers will find that free parking becomes an even more valuable employee benefit. Similarly, this type of tax increases the value of building space with parking included rather than rented separately, so developers are likely to increase the amount of parking bundled with building rents.

Such a tax applies primarily in downtowns and other major urban centers, where more parking is priced, and not in suburbs where most parking is provided free. As a result, it makes urban centers relatively less competitive compared with suburban locations where parking is unpriced. In this way, commercial parking taxes can increase total parking subsidies and sprawl, contradicting other planning objectives.

Examples

- The City of San Francisco imposes a 25% tax on all commercial off-street, non-residential parking transactions (“any rent or charge required to be paid by the user or occupant of a parking space”). Revenues are divided between the city’s general revenue, public transportation and senior citizen funds.
- The City of Pittsburgh imposes a 31% parking tax (increased to 50% in 2005), the highest rate in the U.S. Parking operators indicated that they had been able to pass the majority of the tax onto the users, but had absorbed some of the tax themselves.

- The City of Miami imposes a 20% tax on all commercial, non-residential, off-street parking. The Miami Downtown Development Authority found no decline in business activity or increase in vacancies due to this tax (Berk & Associates 2002). Commercial parking operators indicated that the surcharge had a significant negative impact on operating income and that they had had to absorb most of the tax, except in the wealthiest business districts, apparently due to the high supply of parking in downtown Miami.
- The City of Los Angeles imposes a tax of 10.6% on fee-based parking, excluding on-street and residential parking. The tax was introduced in 1990, and was fully passed on to users (parking operators did not absorb any of the tax). The tax was felt to have negligible impact on driving habits. The tax generates approximately US\$58 million, flowing into general revenues (Berk & Associates 2002).
- The City of Chicago imposes a flat tax (rather than a percentage tax) on daily, weekly and monthly parking, as summarized below. It contributes to general revenues.

Chicago Parking Tax Rate

Hourly	Weekly	Monthly
If fees are \$2 - \$5 Tax is \$0.75	If fees are \$10 - \$25 Tax is \$3.75	If fees are \$50 - \$100 Tax is \$15.00
If fees are over \$5 Tax is \$2.00	If fees are over \$25 Tax is \$10.00	If fees are over \$100 Tax is \$40.00

- New York City imposes a tax of 18.5% on commercial parking and 10.5% on residential parking in Manhattan.

Table 1 summarizes examples of commercial parking taxes in U.S. cities, indicating that they range from 6-31% of revenues.

Table 1 Parking Taxes In Various Cities (Various Sources)

City	Parking Tax
Bainbridge Island, Washington	12% of revenues on both public and private parking facilities.
Bremerton, Washington	6% of commercial operator revenues.
Burien and SeaTac, Washington	\$1.00 per parking transaction. Exemptions for people with disabilities, government vehicles and carpools.
Baltimore, Maryland	\$14 flat fee on monthly parking transactions, 11% on daily and weekly parking.
Cleveland, Ohio	8% tax to fund a new football stadium.
Detroit, Michigan	30% tax on airport commercial parking.
Los Angeles, California	10% of parking revenues.
Miami, Florida	27.8% of revenues.
New York	18.5%, or 10.5% for Manhattan residents.
Oakland, California	10% of revenues.
New Orleans, Louisiana	12% of revenues.
Pittsburgh, Pennsylvania	31% of revenues.
Santa Monica, California	10% of revenues.

This table summarizes examples of commercial parking taxes in U.S. cities.

Per Space or Area Levies

Some jurisdictions apply special taxes (called a *levy*) on parking facilities, based either on the number of spaces or their surface area. Such taxes can be structured to support specific planning objectives, such as applying a levy only on *unpriced parking*, to encourage property owners to price parking.

Implementation

A parking levy is similar to a general property tax but applies specifically to parking facilities. It can be a flat fee per space or based on the facility's surface area. It requires parking space inventory, which can be incorporated into general property tax records.

Impacts on Parking Supply and Pricing

By increasing the annual cost of each parking space, per space taxes can help reduce total parking supply and encourage parking pricing. For example, a parking levy may cause a 5-10% reduction in total parking supply and a similar size increase in the portion of parking that is priced. Supply reductions primarily affect infrequently-used spaces, particularly if property operators are allowed and encouraged to reduce parking supply.

Examples

Examples of parking taxes are described below.

Australian Experience

Three Australian cities have special levies on non-residential urban parking, intended to encourage use of alternative modes and fund transport facilities and services:

- In Sydney, a *Parking Space Levy* of AU\$800 annual per stall is currently applied to parking in the central business district (CBD), and AU\$400 per stall at other business districts. The levy applies to all privately owned, non-residential, off-street parking. It is prorated for parking facilities that are only used occasionally, such as church parking lots; property owners must maintain daily records indicating how often such space is used. The levy raises more than AU\$40 million annually, which is dedicated to transportation projects and cannot be used for operating expenses.
- In Perth, parking suppliers within the CBD and surrounding area must pay a *Parking Licence Fee*, which has different rates for short-term and long-term use facilities (DPI, 2002). Owners only pay for the number of parking spaces that are actually in use, and may shift a space from one category to another (from "in use" to "out of use") and pay a prorated amount if appropriate for part of a year. When first introduced in 1999, the levy was AU\$70 per space, and by 2006 had risen to AU\$169 for short-stay parking and AU\$195 for commuter-orientated parking. Businesses with five parking stalls or less are exempted from the charge. The levy raises about AU\$9 million annually.
- In Melbourne, a *Long Stay Car Park Levy* will be charged to designated long-stay and permanently leased parking spaces in CBD commercial car parks. The levy is intended to encourage car park owners to convert long-stay spaces into short-stay spaces, creating more parking options for shoppers and visitors. The levy applies to about 52,000 off-street parking spaces. A 2010 review of the program concluded that it has been moderately successful at shifting long-term to short-term parking and reducing traffic congestion (DTF 2010).

Perth and Sydney have similar tax collection procedures. The state government’s revenue collection agency sends a parking license application to all non-residential property owners within the designated area. Property owners are required to return the completed application indicating all parking spaces on their property, including land used for motor vehicle parking even if parking spaces are not marked out. In Sydney, for example, where an unmarked area is used for parking, the number of spaces is determined by dividing the total area, by 25.2 square meters, which takes into account parking spaces and access lanes. Owners are sent an annual assessment based on this application. In Perth, the parking license holder is responsible for ensuring that the number of vehicles parked anywhere within the boundary of their property is within the number licensed. The licensing and payment of the levy for on-street parking is the responsibility of local government which meets this requirement from the revenue generated from their on-street parking operations. Table 2 compares features of Sydney and Perth levies.

Table 2 Parking Levy Comparison (Enoch 2001 and other sources)

	Sydney	Perth	Melbourne
Name	Parking Space Levy	Parking Licence Fee	Long Stay Car Park Levy
First Implemented	1992	1999	2006
Annual Levy	Central CBD: \$800 Other districts: \$400	Short stay: \$155 Long stay: \$180	\$400 annually in 2006 \$800 annually in 2007
Annual revenues generated	AU\$40 million	AU\$8.2 million	\$19 million first year \$39 million second year
Use of revenues	Transport facilities	Downtown transit	CBD transport
<i>Exceptions</i>			
On-street	Exempt	Not exempt	Exempt
Residential use	Exempt	Exempt	Exempt
Part-time facilities	Pro-rated by use	No reduction	Exempt
Publicly-owned facilities	Exempt	Not exempt	Exempt
Currently unused spaces	Not exempt	Exempt	Exempt
Small businesses (5 stalls or fewer)	Not exempt	Exempt	
Disabled persons parking	Exempt	Exempt	Exempt
Loading & taxi parking bays	Exempt	Exempt	Exempt
Public service vehicle spaces	Exempt	Exempt	Exempt
Service (e.g., repairs) spaces	Exempt	Exempt	Exempt
Car sales and service spaces	Exempt.	Exempt	Exempt

This table compares the per-space parking levies in Sydney, Perth and Melbourne Australia.

Perth officials consulted extensively with stakeholders prior to the levy’s introduction. As a result, there was an approximately 98% compliance rate the first year. When first applied in 1999, there were about 58,000 stalls, of which about 4,000 were exempt on usage grounds and 2,000 because they are owned by small businesses. This was about 10% fewer than recorded in a 1998 survey, indicating that the levy reduced downtown parking supply. Most of the eliminated spaces were situated near the edge of the levy area and remote from the areas of high parking demand (Enoch 2001). Some businesses decommissioned spaces to meet the five stalls or less exemption, and some long-stay parking was converted to short-stay use, increasing parking availability and turnover.

Vancouver, British Columbia (www.bcrelinks.com/articles/rbj3-new.htm)

TransLink, the Vancouver, British Columbia regional transportation authority which builds and operates roads and bikepaths, and public transport services, implemented a Parking Site Tax in 2006. The initial rate was \$1.02 annually per square meter of non-residential parking facility, typically \$25-\$40 per space. *BC Assessment*, a provincial agency, was charged with assessing and collecting the tax using the existing property tax framework. The agency used aerial photos, digital mapping, municipal records and site visits to develop an inventory of non-residential parking facilities in the region. Exemptions include:

- On-street parking.
- Most buildings exempt from general property taxes (schools, churches, synagogues, etc.).
- Parking facilities used for vehicle retail and rental business inventory storage, impounded vehicles, trailers of tractor-trailer units, vehicle servicing and fueling.
- Parking facilities owned by TransLink (including Park & Ride lots).
- Ferry loading queuing areas.
- Campgrounds.

This tax was criticized by suburban businesses. In 2007 the Provincial government changed TransLink's charter to, among other things, eliminate the parking property tax and replaced it with other revenue sources, including a sales tax on parking transactions. This began as a 7% tax but increased to 21% in 2010.

Toronto Commercial Concentration Tax

During the early 1990s, the Ontario provincial government imposed a Commercial Concentration Tax (CCT) of \$1.00 per square foot per annum on commercial properties larger than 200,000 square feet in the Toronto area, to fund transit and road programs. Large-scale paid parking facilities were subject to this tax, although the tax was not specific to parking. Unexpectedly, some of the largest impacts were on suburban parking facilities where the fee was relatively large compared with paid parking revenues. As a result, suburban area municipal lots and transit Park & Ride lots abolished their parking fees to avoid paying the tax (IBI 2000). The tax had no apparent impact on regional vehicle travel, since it caused a relatively small price increase in downtown areas, and had little or no impact in suburban areas where most parking is free, and in some cases resulted in the elimination of parking charges to avoid the tax. The tax was highly criticized because it generated revenues from Toronto businesses but used the revenues to fund projects in other parts of the province and was repealed after three years.

Parking As A Taxable Benefit

Many jurisdictions classify parking provided by employers to employees as a taxable benefit for income tax. Some jurisdictions, such as the U.S., tax parking subsidies over a certain value. However, this rule is often overlooked or the value of parking subsidies is significantly understated.

Employee Parking As A Taxable Benefit in Canada

Employee parking is a taxable benefit in Canada. However, Revenue Canada provides technical exemptions that allow most employees to avoid paying the tax, or pay a relatively low amount. These include an exemption if an employer would find it difficult to determine the value of the employees’ parking spaces, and if several parking spaces are shared among employees, rather than each having an individually assigned space.

Employee Parking As A Taxable Benefit in Sweden

Commuter parking provided by employers is a taxable benefit in Sweden. Employers are required to report the market value of parking benefits on income tax forms. Employees who receive an assigned parking space are tax for every workday day, regardless of actual use. Employees offered a shared space are only taxed for the number of days that they actually use it. Specific rules apply if an employee must use their vehicle for work purposes. If a vehicle is used for work at least 160 days a year and at least 3000 kilometres its parking is tax exempt. If they drive between 60 and 160 days a year and at least 3000 kilometres, parking is only be taxed for the number of days that the vehicle is driven for commuting but not used for work purposes.

Stormwater Fees

Stormwater fees are special charges applied to impervious surfaces (pavement and buildings) to fund stormwater management systems (drain systems, treatment facilities, etc.). Such fees range from about \$5 to \$20 per 1,000 square feet, or about \$1-7 annually per off-street parking space, as indicated in the table below.

Table 3 Annualized Stormwater Fees (PCW 2002)

Jurisdiction	Fee	Per 1000 Sq. ft.	Per Space
Chaple Hill, NC	\$39 annual 2,000 sq. ft.	\$19.50	\$6.50
City of Oviedo Stormwater Utility, FL	\$4.00 per month per ERU	\$15.00	\$5.00
Columbia Country Stormwater Utility, GA	\$1.75 monthly per 2,000 sq. ft.	\$10.50	\$3.50
Kitsap County, WA	\$47.50 per 4,200 sq. ft.	\$11.30	\$4.00
Raleigh, NC	\$4 monthly per 2,260 sq. ft.	\$18.46	\$6.00
Spokane Country Stormwater Utility, WA	\$10 annual fee per ERU.	\$3.13	\$1.00
Wilmington, NC	\$4.75 monthly per 2,500 sq. ft.	\$22.80	\$7.50
Yakima, WA	\$50 annual per 3,600 sq. ft.	\$13.88	\$6.50

“Equivalent Run-off Unit” or ERU = 3,200 square foot impervious surface.

Montreal Parking Space Tax (<http://spacingmontreal.ca/2010/01/17/the-parking-lot-tax>)

The 2010 City of Montreal budget includes a new tax on off-street parking facilities. The charges range from \$4.95 per square metre for neighborhood structured parking up to \$19.80 per square metre for CBD surface parking, or \$75 to \$300 annually for a three by five meter space. The city expects it to collect around \$20 million dollars per year which is earmarked for improving public transit.

Worksite Parking Levies

Some European jurisdictions allow workplace parking levies to raise revenues and encourage commute alternatives. Implementation has been limited. Below are examples:

- In 1999 the Irish Minister of Finance considered but did not implement a tax on free commuter parking at urban worksites, and is now considering applying a higher property tax rate on parking than other types of property (Enoch 2001).
- A Dutch *Parking Policy Implementation Paper* promotes policies that tightly restrict parking in city centres and limit parking availability in other areas based on accessibility to public transport. Cities such as Amsterdam and Leiden have implemented city centre parking management programs, including taxes on long-term parking to discourage commuting by car. Short-term parking is exempt to accommodate shoppers and business trips, and keep city centre businesses competitive with suburban businesses.
- The City of Nottingham plans to implement a Workplace Parking Levy (WPL) on employers that provide 11 or more liable parking places starting April 2012 (www.nottinghamcity.gov.uk/index.aspx?articleid=2566). It is a charge on businesses; employers decide whether or not to pass the charge on to their employees. All WPL revenue will be invested into improving public transport. This is being implemented as an alternative to a road user charge. The WPL is projected to reduce traffic congestion. The pricing itself is expected to have only a small impact, since only a small portion of the fee is expected to be passed onto commuters, but the additional transit service funding is predicted to increase City Centre public transport travel by over 20% and reduce area traffic growth from 15% to only 8%, which should provide significant congestion reduction benefits.

Pricing Public Parking

In most communities a significant portion of high value parking facilities are publicly owned, including on-street spaces, off-street public parking (such as downtown area parking lots and structures), and off-street parking serving public facilities such as schools, parks and government offices, and only a small portion of these spaces are priced, typically, on-street parking on major commercial streets during weekdays, and some public off-street facilities. Pricing of public-owned parking can be expanded as a way to manage parking demand, manage vehicle traffic, and generate revenue (Shoup 2005). Although not technically a tax, it is equivalent to requiring and then taxing private parking facilities. Some examples are described below.

Seattle

The City of Seattle's program to replace coin-operated parking meters with modern wireless pay-stations increased revenue from about \$10 million in 2003 to about \$16 million in 2006. This resulted from increased payment compliance (the new system is easier to use because it allows credit and debit card payments), more priced spaces, and higher hourly rates. By the end of 2006 the city is projected to have 1,573 pay kiosks covering more than 11,000 parking spaces (a pay station typically serves six spaces). The capital cost was \$10.3 million to install the pay stations and remove 9,000 old meters. City officials are considering extending pricing to nights and weekends in some areas, which is easy with the new centrally-controlled system which can be programmed for varying hours at select locations. Enforcement is cheaper compared with free, time-limit parking because enforcement officers need only make a single pass, rather than chalking vehicles and returning two hours later to issue citations.

Old Pasadena Parking Revenue (Kolozsvari and Shoup 2003)

To help address downtown parking problems Pasadena, California city officials proposed pricing on-street spaces to increase turnover. Local merchants initially opposed the idea the city agreed to dedicate all revenues to downtown improvements. The merchants agreed to the proposal. In 1993 a Parking Meter Zone (PMZ) was established within which parking was priced and revenues invested. Because parking was previously unpriced the city lost no revenue, and gained overtime fine revenue.

The city formed an advisory board of business and property owners to oversee parking policies and expenditure priorities. Connecting parking revenues directly to added public services and keeping it under local control helped the program succeed. Investments included new street furniture and trees, more policing, better street lighting, more street and sidewalk cleaning, pedestrian facility improvements, and marketing. To highlight these benefits each parking meter has a sticker that reads, *Your Meter Money Will Make A Difference: Signage, Lighting, Benches, Paving*. This created a "virtuous cycle" in which parking revenue funds improvements that attract more visitors, increases revenue, allowing further improvements, resulting in extensive downtown redevelopment. Parking is no longer a problem for customers, who can almost always find a convenient space. Local sales tax revenues have increased far faster than in other shopping districts with lower parking rates, and nearby malls that offer free customer parking.

Austin Parking Benefit District (www.ci.austin.tx.us/parkingdistrict/default.htm)

Many neighborhood experience parking spillover problems, including difficulty finding parking for residents and visitors, concerns that public service vehicles cannot pass two lanes of parked vehicles on the street, or that parking on the street reduces neighborhood attractiveness. These problems become an opportunity with the establishment of a Parking Benefit District (PBD) A PBD is created by metering the on-street parking (either with pay stations on the periphery of the neighborhood or with the traditional parking meters) and dedicating the revenue, less City expenses for maintenance and enforcement, towards improvements in the neighborhood that promote walking, cycling and transit use, such as sidewalks, curb ramps, and bicycle lanes. Charging for parking and promoting alternatives reduces parking in neighborhoods and helps fund neighborhood benefits. The PMD may be used in conjunction with a Residential Permit Parking program to ensure that parking is available for residents and their visitors.

Greenwich Village, New York (Bernstein 2010)

In 2009 New York City increased Greenwich Village parking meter rates from \$2 an hour to \$3 an hour during peak periods (compared with \$17 an hour in nearby garages). As a result, on-street parking spaces are almost always available. As a result, the city is now expanding this price structure to other areas.

Ashland, Oregon

Ashland is a small but rapidly growing city in central Oregon, famous for its Shakespeare Festival which attracts tens of thousands of visitors each year. The city's downtown is a major destination and activity center, particularly during the summer tourist season. Downtown business people were concerned that existing parking supply was at capacity but feared that pricing parking would have a negative effect on customer traffic. To address these concerns local planners examined the experience of five comparable cities that have recently implemented priced parking. Their research indicated that pricing did not adversely affect visitor demand or use, that it increased turnover, that it generates net revenue, and that newer multi-space meters work well.

Using this feedback and information, the planners developed a parking management plan. They divided the downtown into three parking management zones, described as *Core*, *Intermediate*, and *Periphery*. For each zone they developed guiding principles, parking management strategies, and an implementation plan. The plan includes parking pricing to increase turn-over, discourage employees from occupying the most convenient spaces, encourage use of alternative modes, finance additional parking supply and support alternative modes. The plan applies the following principles when pricing publicly-owned off-street facilities:

- The short-term rate is equal to the hourly fee charged for on-street parking.
- Special evening rates to serve appropriate uses.
- Long-term, daily/monthly rates that reflect the objectives of each zone.
- Rates adjusted as needed to maintain optional utilization (i.e., 85% peak occupancy).
- Rates adjusted as needed to shift long-term parkers outside the Core zone.

European Parking Management (Kodransky and Hermann 2011)

European cities are reaping the rewards of innovative parking policies, including revitalized town centers; big reductions in car use; drops in air pollution and rising quality of urban life, according to *Europe's Parking U-Turn: From Accommodation to Regulation*, published by the Institute for Transportation and Development Policy.

The report examines European parking over the last half century, through the prism of ten European cities: Amsterdam, Antwerp, Barcelona, Copenhagen, London, Munich, Paris, Stockholm, Strasbourg and Zurich. It found:

- European cities are ahead of the rest of the world in charging rational prices for on-street parking. In Paris, the on-street parking supply has been reduced by more than 9% since 2003, and of the remaining stock, 95% is paid parking. The result, along with other transport infrastructure improvements, has been a 13% decrease in driving.
- Parking reforms are becoming more popular than congestion charging. While London, Stockholm, and a few other European cities have managed to implement congestion charging, more are turning to parking. Parking caps have been set in Zurich and Hamburg's business districts to freeze the existing supply, where access to public transport is easiest.
- Revenue gathered from parking tariffs is being invested to support other mobility needs. In Barcelona, 100% of revenue goes to operate Bicing—the city's public bike system. Several boroughs in London use parking revenue to subsidize transit passes for seniors and the disabled, who ride public transit for free.
- Parking is increasingly linked to public transport. Amsterdam, Paris, Zurich and Strasbourg limit how much parking is allowed in new developments based on how far it is to walk to a bus, tram or metro stop. Zurich has made significant investments in new tram and bus lines while making parking more expensive and less convenient. As a result, between 2000 and 2005, the share of public transit use went up by 7%, while the share of cars in traffic declined by 6%.

Comparison of Impacts

A tax’s impacts on parking supply, parking price and travel patterns depend on how it is structured and its magnitude. Below are factors that affect these impacts:

- A tax that only applies to priced parking tends to increase commercial parking prices and reduce the portion of parking provided by commercial operators, since it reduces profitability and increases the value to motorists of subsidized and bundled parking.
- A tax that applies to all parking facilities tends to reduce total parking supply if that is allowed, particularly if it is supported by other parking management strategies such as programs to encourage sharing of parking facilities and use of alternative modes.
- A tax that only applies to unpriced parking will tend to reduce parking supply and increase the portion of parking that is priced.
- A tax or fee that applies in a relatively small geographic area may shift some parking facilities and activities to other, lower-taxed areas.

Commercial parking tax impacts are concentrated in certain areas and types of trips. Because only a small portion of parking is priced, a commercial parking tax must collect far more revenue per space than a per-space levy to raise a given amount of revenue. For example, a commercial parking tax might need to collect \$300 per priced space while a per-space levy would only need to collect \$30 per space to raise \$5 million annually. Table 5 calculates the magnitude of the two taxes relative to various types of parking facility costs. A commercial parking tax is greatest for high-priced parking, which is usually located in major central business districts (CBDs). Per space levies tend to have the greatest impact in suburban areas where there are many lower-value parking spaces, some of which may be decommissioned or priced if their annual costs increase.

Table 5 Typical Parking Facility Financial Costs (“Parking Costs,” Litman 2004)

Type of Facility	Land Costs	Construction Costs	O & M Costs	Total Annual Cost	Commercial Parking Tax	Per Space Levy
	<i>Per Space</i>	<i>Per Space</i>	<i>Annual, Per Space</i>	<i>Annual, Per Space</i>	<i>20% of Revenues</i>	<i>\$30 Per Space</i>
Suburban, On-street	\$200	\$1,500	\$200	\$360	20%	8.3%
Suburban, Surface, Free Land	\$0	\$1,500	\$200	\$342	20%	8.8%
Suburban, Surface	\$455	\$1,500	\$200	\$384	20%	7.8%
Suburban, 2-Level Structure	\$227	\$6,000	\$300	\$888	20%	3.4%
Urban, On-Street	\$1,000	\$2,000	\$200	\$483	20%	6.2%
Urban, Surface	\$2,083	\$2,000	\$300	\$685	20%	4.4%
Urban, 3-Level Structure	\$694	\$8,000	\$400	\$1,221	20%	2.5%
Urban, Underground	\$0	\$20,000	\$400	\$2,288	20%	1.3%
CBD, On-Street	\$8,000	\$2,500	\$300	\$1,291	20%	2.3%
CBD, Surface	\$15,385	\$2,500	\$300	\$1,988	20%	1.5%
CBD, 4-Level Structure	\$3,846	\$10,000	\$400	\$1,707	20%	1.8%
CBD, Underground	\$0	\$22,000	\$500	\$2,388	20%	1.3%

This table illustrates parking taxes relative to various parking facility costs under various conditions. For more calculations see www.vtppi.org/parking.xls. CBD = Central Business District.

Commercial parking operators typically require a 10% or greater return on operations. They are unlikely to fully absorb a large parking tax; they would either pass it on to customers or close down a lot. To the degree that a tax is passed on to users, travelers can respond by paying the tax, changing modes (for example, from driving to cycling, ridesharing or public transit), destinations (for example, from city center to suburban mall), parking location (for example, using free parking outside the CBD and walking to their destination), or parking duration (remaining downtown for less time). Such impacts depend on the price sensitivity of the market, referred to as the *price elasticity*. Where demand is elastic, a price increase will cause consumers to use significantly less parking, forcing commercial parking operators to absorb more of the tax or reduce parking supply.

Many studies have estimated the elasticity of parking demand (“Transportation Elasticities,” VTPI 2005). Elasticities typically range between -0.2 and -0.4 , indicating that a 10% increase in parking price reduces parking demand by 2-4%. Many factors can affect these impacts. Price elasticities tend to be greater for longer-term users such as commuters than for shorter-term users such as shoppers, and are greater for a particular location (for example, a particular lot) than an area (for example, if all parking lots in a downtown increase their prices), since some motorists respond to price differences by switching where they park. These elasticities indicate that a 20% commercial parking tax which is fully passed on to users will reduce parking demand in areas dominated by commercial parking by 4-8%, but a much smaller portion of total travel.

Reductions in parking supply and increases in the portion of parking that is priced are likely to be largest if these taxes are implemented in conjunction with other parking management strategies, such as reductions in minimum parking requirements and standardized parking pricing systems (Litman 2006a). A per-space tax that only applies to unpriced parking could significantly increase the portion of parking that is priced, and so can be an effective parking pricing reform.

Equity can be evaluated in many different ways, reflecting different concerns and perspectives (“Equity Evaluation,” VTPI 2005; Willis 2011). From a *horizontal equity* perspective a parking tax can be considered most equity if it is broadly applied. From this perspective a per-space tax and more public parking pricing appear most equitable. Parking taxes and fees can be considered user fees, which are therefore most equitable if they reflect the external costs of parking facilities and motor vehicle use. From this perspective per-space taxes and pricing public parking appear most equitable, especially if such taxes and fees vary to reflect differences in costs, such as higher rates in denser urban areas.

From a *vertical equity* perspective a parking tax can be considered most equitable if the cost is borne mostly by higher income people. From this perspective a commercial parking tax may be considered most equitable, since such facilities are mostly used by higher-income motorists, except in some urban neighborhoods where relatively low-income people also pay for parking. Other equity issues may include the impacts on businesses resulting from changes in their costs and costs to their customers, and impacts on the commercial parking industry and its employees.

Table 4 summarizes differences between these tax and pricing options.

Table 4 Parking Tax Comparison

	Commercial Parking Tax	Per-Space or Area Levy	Price Public Parking
Description	Tax on commercial (user paid) parking transactions.	Tax on parking spaces, either per-space or based on area.	Charge for use of more public parking facilities.
Distribution of tax burden	Borne by commercial operators, motorists who use their services, and businesses in major commercial centers.	Borne by non-residential property owners. Because it applies to all parking facilities the burden is widely distributed.	Borne by motorists who use such facilities, and sometimes businesses in areas where parking is priced.
Implementation	Commercial operators pay based on their receipts. Some jurisdictions require operators to use certified revenue control systems that provide user receipts and transaction records.	Special property tax assessment. Requires an inventory of parking spaces, which is generally incorporated into the property tax assessment rolls.	Install and enforce parking payment systems, and expand when and where fees are charged.
Parking supply	Tends to reduce commercial parking and encourage free parking. May reduce total supply where a significant portion of parking is provided by commercial operators.	By increasing the cost of owning parking facilities this tax tends to reduce total parking supply, particularly parking spaces that receive minimal annual use.	By encouraging more efficient use of parking facilities allows supply to be reduced, or the need to expand supply avoided, if desired by public officials.
Parking prices	Increases prices of commercial parking, but reduces the portion of parking that is priced.	May increase the portion of parking spaces that are priced and encourage pricing that favors short-term use.	Increases the portion of parking that is priced. May involve increasing prices.
Parking management	Little impact.	By reducing parking supply encourages better parking management.	Represents a type of parking management.
Transport	By increasing parking prices tends to reduce some vehicle trips, but they may also shift travel from urban to suburban locations, and increase free parking, increasing vehicle use.	By reducing parking supply and increasing the portion of parking that is priced it tends to reduce vehicle use, particularly if implemented with improvements to other travel modes.	By increasing parking prices tends to reduce some vehicle trips, but they may also shift travel from priced to unpriced locations.
Land Use	Because it primarily applies in major commercial centers and gives suburbs a competitive advantage it encourages sprawl.	Because it applies to all parking and encourages reduced parking supply it encourages more compact development.	Depends on where pricing is applied. If widely applied may support land use planning objectives.
Equity	By imposing costs on a limited portion of motorists, tends to be horizontally inequitable, but may be progressive with respect to income.	By distributing costs broadly among property owners and motorists, tends to increase equity, particularly if considered a user fee.	By distributing costs more broadly among motorists, tends to increase equity, particularly if considered a user fee.

This table compares the two types of parking taxes.

Best Practices

Below are suggestions for structuring and implementing parking taxes to increase public acceptability and their ability to help achieve various planning objectives. For more information see Berk & Associates (2002); Shoup (2005) and Litman (2006a & b). Below are best practices recommendations:

- The tax base should be broad and well defined. A broad tax base spreads the financial burden and does not give certain groups a competitive advantage. For example, it is most equitable to tax publicly owned as well as private parking facilities.
- Before imposing special parking taxes, local governments should increase their own parking prices to market rates. Commercial operators tend to be more accepting of a parking tax if governments are already maximizing income from other parking-related revenue sources, such as meters and enforcement of parking regulations.
- Taxes and fees should be structured to avoid undesirable land use, travel or economic impacts, such as increased sprawl or reduced downtown competitiveness.
- Parking tax reforms should be part of overall parking and mobility management programs and coordinated between jurisdictions in a region.
- Exemptions and discounts should be well defined and audited to insure they apply as intended.
- Stakeholders, such as commercial parking operators, should be consulted to insure that regulations, administrative procedures, and enforcement policies are efficient and fair.
- If possible, require parking suppliers to pass taxes on to motorists, rather than absorb it.
- Enforcement should be fair, friendly and effective.
- Taxes should be structured for efficient compliance and auditing. When implementing a commercial parking tax, operators should be required to use a ticketing system that provides receipts and creates secure transaction records suitable for auditing.
- Establish an evaluation program, with before-and-after analysis, to determine the taxes impacts on parking supply and pricing, economic activity, traffic, and spillover problems.
- A tax can be charged on curbcuts, comparable to potential revenue foregone had the same curb area been devoted to priced on-street parking. This encourages property owners to minimize the number and width of curb cuts by consolidating driveways and parking lots.

There are often debates over exemptions and discounts. *Functional* exemptions are justified if collecting a tax is not cost effective. For example, Perth's levy exempts businesses with fewer than six parking spaces, which significantly reduces administrative costs. Some exemptions are justified on *equity* grounds, because parking spaces are infrequently used (e.g. drive-in theaters), serve public service organizations (churches, schools, hospitals, etc.), and people with low incomes or disabilities. It is usually best to offer equity-based *discounts* rather than *exemptions* so everybody pays a share and has incentives to use parking efficiently. For example, drive-in theaters and churches can be charged a prorated levy based on the portion of days a space is occupied, tax exempt organizations can pay discounted levies, and people with disabilities might qualify for a discount or rebate for a portion of the parking taxes they pay.

Conclusions

Although few taxes are popular, some are better than others in terms of economic efficiency, consistency with strategic planning objectives, and equity. Properly implemented parking taxes can provide multiple benefits; they can help reduce traffic congestion, encourage more compact development, and support environmental objectives, in addition to raising revenue. If a jurisdiction must raise revenue, parking taxes are among the best options.

In general a *commercial parking tax* (a special tax on parking rental transactions) is relatively easy to implement but tends to contradict other planning objectives. It discourages pricing of parking, encourages sprawl, and its cost burden tends to be concentrated in a few areas, such as major commercial centers, campuses and hospitals.

A *per-space parking levy* (a special property tax applied to parking facilities) is more challenging to implement because it requires an inventory of qualifying parking facilities, but it encourages property owners to reduce parking supply (particularly seldom-used spaces) and manage their parking supply more efficiently, and it encourages pricing of parking. As a result, it encourages more compact, accessible, multi-modal land use patterns and reduces sprawl. Its cost burden is more evenly distributed.

Most jurisdictions own and operate many currently free parking spaces that could be priced. Charging for use of such parking is in many ways comparable to requiring private property owners to supply parking and taxing such facilities. Pricing public parking can be an effective way to manage vehicle traffic and parking demand, and raising revenue.

Such taxes and fees tend to provide the greatest benefit if they are:

- Applied as broadly as possible, to the widest geographic area and the most categories of parking facilities.
- Implemented as part of parking management programs that encourage more efficient use of parking facilities, allow parking supply to be reduced, and anticipate any spillover problems that might occur.
- Implemented as part of mobility management programs that encourage use of alternative modes.
- Implemented as part of smart growth policies that encourage more compact, mixed, multi-modal community development.
- Structured so users to pay them directly, as an incentive to reduce marginal vehicle ownership and use.
- Implemented in cooperation with property tax assessment agencies (to reduce implementation costs) and the business community (to reduce implementation problems).
- Used to fund local improvements.

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