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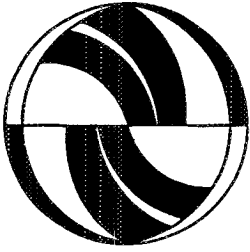
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A Precedent for Congestion Pricing?**

Donald C. Shoup

Working Paper
UCTC No. 205

**The University of California
Transportation Center**

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**Cashing Out Employer-Paid Parking:
A Precedent for Congestion Pricing?**

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Working Paper
July 1993

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UCTC No. 205

The University of California Transportation Center
University of California at Berkeley

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CASHING OUT EMPLOYER-PAID PARKING: A PRECEDENT FOR CONGESTION PRICING?

Donald C. Shoup

SUMMARY

Almost all parking in the United States is provided free to the user. In the 1990 Nationwide Personal Transportation Survey, motorists reported receiving free parking for 99 percent of all automobile trips. Because the average car is parked 95 percent of the time, it seems clear that, in most cases, congestion tolls would charge motorists for the use of roads during the brief time they are travelling between free parking spaces

In considering the potential benefits of congestion pricing, previous research on parking pricing provides useful evidence that automobile use is surprisingly sensitive to its price. The purpose of this study is (1) to present the evidence from parking studies on the price elasticity of demand for automobile travel, (2) to explore how employer-paid parking subsidies contribute to the problems that congestion tolls are meant to solve, (3) to propose a policy to "cash out" employer-paid parking subsidies, (4) to explain California's new parking cash-out legislation, and (5) to describe some early results of the California legislation and speculate on how it may serve as a precedent for implementing congestion pricing.

Employer-Paid Parking Encourages Solo Driving

Employer-paid parking is a major cause of free parking. It is like a matching grant: employers offer to pay the cost of parking if employees are willing to pay all the other costs of driving to work. Work trips account for approximately half of all peak-hour travel. Evidence from the NPTS and a variety of other sources indicate that at least ninety percent of American commuters who drive to work pay nothing to park.

How strongly does employer-paid parking encourage solo driving to work? For the 50,000 solo drivers who receive employer-paid parking in downtown Los Angeles, the average parking subsidy is equivalent to 11 cents per mile driven. Their average parking subsidy is 16 times greater than the federal gasoline tax they pay for their commute trip. Thus, even an improbably huge increase in the gasoline tax would discourage fewer solo commute trips than free parking now encourages. Finally, the average subsidy for commuter parking in downtown Los Angeles is almost 50 percent greater than the total cost of gasoline for the average commute trip. An employer's offer of free gasoline for all employees who drive to work would be recognized as an environmental outrage, yet employer-paid parking is a much stronger financial incentive to drive to work.

Table 2 summarizes the results of well-documented case studies of how employer-paid parking stimulates solo driving to work. On average, employer-paid parking shifts 25 percent of all commuters into solo driving from other modes, and stimulates 19 more cars to be driven to work for every 100 employees.

The figures in Table 2 show that automobile use responds strongly to parking prices, and therefore suggest that automobile use would also respond strongly to congestion prices. But there are several reasons to believe that automobile use would respond even more to congestion prices than to parking prices. First the studies refer to commuters' responses to the price of automobile trips to work, which are the most essential trips for most people. For other trip purposes, travellers have the option to respond to a congestion toll not only by choosing a different mode, but also by shifting their travel time, or destination, or by not taking the trip. Second, if commuters have already arranged their lifestyles to accommodate to a world where almost all parking is free, and the price of parking increases at the one location to which they must travel to earn their living, they will cut back on automobile use by much less than they would if *all* parking prices were raised to their market values. Third, the elasticity estimates in Table 2 refer to commuters' responses to changes in the price of only one component of their trip (parking price), and are therefore smaller than the elasticity of demand with respect to changes in the full price of automobile trips.

The Internal Revenue Code Encourages Employer-Paid Parking

The Internal Revenue Code classifies an employer's payment for parking as a tax-exempt fringe benefit for the employee. But if the employee pays for parking at work, the Code does not allow the employee to deduct the parking charge as a work-related expense. Therefore, to take advantage of the tax-exemption for commuter parking, the employer must pay for the employee's parking. The Code exempts employer-paid parking from more than just the Federal income tax. The exemption is automatically extended to Social Security taxes, state income taxes, unemployment insurance taxes, and all other payroll taxes. When all these related tax exemptions are taken into account, \$1 of employer-paid parking is worth more than \$2 in taxable cash wage income for many employees. Therefore, the Code's peculiar asymmetrical tax exemption for *employer-paid* (but not for *employee-paid*) parking is a clear and strong financial incentive that has inadvertently shifted the responsibility for paying for almost all commuter parking entirely from the employee to the employer, and has thus reduced the employee's cost of parking to zero. This unique, deliberate, and specially targeted tax subsidy has had the unfortunate, unintended, and largely unnoticed effect of stimulating a huge increase in the number of commuters who drive to work alone.

Cashing Out Employer-Paid Parking

Ridesharing and mass transit advocates have argued for years to end this tax bias because it aggravates traffic congestion and air pollution, and stimulates gasoline consumption. But eliminating a tax exemption that benefits so many workers--at all income

levels--is politically difficult. Thus, it seems quixotic to try to eliminate the special tax exemption for employer-paid parking, no matter how much harm it does.

Given the general popularity of employer-paid parking subsidies, a long step in the right direction would be to amend the Internal Revenue Code's definition of tax-exempt "qualified parking," as follows:

QUALIFIED PARKING - The term "qualified parking" means parking provided to an employee on or near the business premises of the employer . . . *if the employer offers the employee the option to receive, in lieu of the parking, the fair market value of the parking, either as a taxable cash commute allowance or as a mass transit or ridesharing subsidy.*

The text in roman type is the existing definition of tax-exempt "qualified parking" in Paragraph (5) of Section 132(f) of the Internal Revenue Code, and the italic text is the proposed amendment.

This amendment retains the popular tax exemption for employer-paid parking, but would require that employers offer their employees the option of cash or a mass transit or ridesharing subsidy in lieu of the tax-exempt parking. The proposal has several important advantages:

1. *Free Parking Will Have an Opportunity Cost.* When commuters are offered the choice between free parking or nothing, the parking has no opportunity cost, and is therefore over-used. But asking commuters to choose between a free parking space *or its cash value* makes it clear that parking has a cost, which is the cash not taken. The new "price" for taking the "free" parking would increase the perceived cost of solo driving to work.
2. *Cashing Out Will Benefit Employees.* Offering employees the option to cash out employer-paid parking subsidies avoids the seemingly intractable problem that voters don't like new taxes and motorists don't like to pay for parking they used to get free. Employers could continue to offer tax-exempt parking subsidies, so long as they broaden the offer. Cashing out *adds* a new alternative to the typical take-it-or-leave-it choice between a parking subsidy or nothing.
3. *Cashing Out Will Cost Employers Little or Nothing.* The only added cost for an employer would occur in the unusual case of current ridesharers who are now offered the choice between free parking or nothing and yet do not take the parking. These current ridesharers would have to be offered the cash value of the parking subsidies they have not taken. But there can be only a very small percentage of such employees. The 1990 Nationwide Personal Transportation Survey found that 91 percent of the American work force commutes to work by car. And one reason that many of the remaining 9 percent do not commute by car is probably that they are among the few employees who are not offered

employer-paid parking (and who therefore would not have to be offered in-lieu cash). Of those very few who are now offered free parking but do not take it, some are already offered an alternative ridesharing subsidy (such as a bus pass), and for these employees the employer's cost of the cash option would be only the difference (if any) between the cash option and the cost of the existing rideshare subsidy. Thus, most employers' added cost of offering cash in lieu of parking subsidies would have to be inconsequential. Finally, employers might be much more willing to offer cash in lieu of a parking subsidy if they knew the tax code required *all* employers to make the same offer; no employer would be put at any competitive disadvantage.

4. *Cashing Out Will Not Unnecessarily Intrude on Employers' Decisions.* Compared to other solutions to the employer-paid parking problem, the cash-option requirement intrudes least in the employer's decisions about employee compensation. Employers who want to subsidize parking without offering an equivalent subsidy for ridesharing could continue to do so. The difference introduced by the cash-option requirement is only that the Internal Revenue Code would no longer reward this discriminatory behavior with a tax exemption for the parking subsidy. The requirement is only that if an employer offers to subsidize an employee's commuting expenses, use of the subsidy cannot be confined to parking (and thus driving to work).

5. *Cashing Out Will Especially Benefit Low Income and Disabled Employees.* Because they are in the lowest tax brackets, the lowest paid workers would gain the most after-tax cash from a taxable cash allowance. Also, the cash allowance would be larger in proportion to a lower income, so the cash option would clearly improve the relative well-being of the lowest-paid workers. Disabled employees and others who cannot drive a car will also benefit from the option to choose cash in lieu of a parking subsidy.

6. *Cashing Out Will Strengthen Central Business Districts.* Employer-paid parking simply equalizes the cost of parking between downtown and suburban work sites (by making it free in both places), and does nothing to make downtown superior to a suburban location. Because downtown employers must pay more than suburban employers to provide employee parking, however, downtown employers could offer more cash in lieu of a parking space without any increase in their cost. This higher cash option for downtown employees would make downtown work sites relatively more attractive than suburban work sites, at least for those who rideshare. Downtown employees could more easily take advantage of the cash option by shifting to mass transit. Also, because a high density of employment implies a high density of potential fellow carpoolers, downtown employees could more easily shift to carpools. Finally, parking spaces vacated by new carpoolers would be a boon to visitors, including shoppers, business clients, and tourists.

7. *Cashing Out Will Yield a Tax Revenue Windfall.* In making the choice between a parking subsidy or its cash value, commuters would have to consider that the cash is taxable,

while the parking subsidy is not. When a commuter does voluntarily choose taxable cash rather than a tax-exempt parking subsidy, federal and state income tax revenues increase. With very conservative assumptions, I have estimated that offering employees the *option* to cash out employer-paid parking subsidies would increase federal and state tax revenues by at least \$1.2 billion a year (see Table 5). This increase in tax payments does not result from an increase in tax rates, or from taxation of previously tax-exempt parking subsidies. Rather it results from voluntary action: cashing out an inefficient in-kind parking subsidy that costs the employer more to provide than the employee thinks it is worth. Put most simply, cashing out an inefficient parking subsidy converts economic waste into increased tax revenue and increased employee welfare, at no extra cost to the employer. This tax revenue windfall is an additional benefit above and beyond the reductions in air pollution, traffic congestion, and energy use.

The Consequences of Cashing Out Employer-Paid Parking

A mode-choice model was estimated with data from a survey of 5,000 commuters and their employers in downtown Los Angeles. The model suggests that offering the option of a taxable cash travel allowance to employees who now park free in downtown Los Angeles would reduce their solo share from the current 69 percent to 55 percent. This mode shift would reduce automobile commuting by 847 VMT per commuter per year, and would reduce gasoline consumption for automobile commuting by 50 gallons per commuter per year (see Table 6).

Although it is risky to extrapolate from one city to the rest of the country, we can illustrate the implications of what has been found in Los Angeles. Approximately 90 million commuters park free at work in the United States. If all these commuters respond to the cash option as has been estimated for Los Angeles, automobile use for commuting would decrease by 76 billion VMT a year, and gasoline consumption would decrease by 4.5 billion gallons of gasoline a year. Obviously, these estimates can suggest only general magnitudes and must be viewed cautiously.

California's New Parking Cash-Out Legislation

The Federal Internal Revenue Code creates a strong incentive for employers to pay for their employees' parking, and thus a strong incentive for commuters to drive to work alone. States and localities are then left with the enormous problem of devising policies to deal with the resulting traffic congestion and air pollution. The State of California has recently enacted legislation that directly addresses the problems caused by employer-paid parking, and that serves as a model of how the Federal government could address the same problems. Briefly, the new California cash-out legislation requires employers of 50 or more persons who provide a parking subsidy to employees to:

provide a cash allowance to an employee equivalent to the parking subsidy that the employer would otherwise pay to provide the employee with a parking space. "Parking subsidy" means the difference between the out-of-pocket amount paid by an employer on a regular basis in order to secure the availability of an employee parking space not owned by the employer and the price, if any, charged to an employee for the use of that space.

Note that the employer must offer an employee the option to take cash in lieu of a parking subsidy *only* if the employer makes an explicit cash payment to a third party to subsidize the employee's parking. Therefore, the employer clearly saves the cash paid for the parking subsidy if the employee takes the cash allowance instead. The employer's avoided parking subsidy directly funds, dollar for dollar, the employee's cash allowance, so there is *no net cost* for the employer when an employee foregoes the parking and takes the cash. The employer must offer the cash allowance *only* to each employee who is offered a parking subsidy. And each employee's cash allowance is equal to the parking subsidy offered to *that* employee, so if some employees are offered smaller parking subsidies than other employees, their required cash allowance would also be smaller. Thus, the law is tightly written to avoid imposing a net cost on employers.

The California cash-out legislation also reduces the burden of parking requirements on new development by mandating that:

The city or county in which a commercial development will implement a parking cash-out program . . . shall grant to that development an appropriate reduction in the parking requirements otherwise in effect for new commercial development.

Data derived from case studies and from a statistical model were used to estimate that cashing out employer-paid parking would reduce parking requirements for new development by at least 17 percent.

Implications for Federal Action

California's cash-out legislation shows that it is feasible to require that employers who pay for parking if an employee drives to work must offer to pay the same amount if the employee rideshares to work. Some employers will undoubtedly encounter problems in adjusting to the cash-out requirement, but the new legislation will merely expose, not create, most of these problems. The real challenge for many employers will be to abandon the outdated notion that the best way to help employees get to work is to pay for their parking.

California's experience suggests that, at the Federal level, it is sensible to proceed cautiously, beginning first with the requirement to offer cash in lieu of a parking subsidy

only in the clearest "win-win" case where the employer pays out-of-pocket cash to a third party to subsidize employee parking. In this case the employer's avoided parking subsidy directly funds, dollar for dollar, the employee's cash allowance, so there is no net cost increase for the employer when an employee foregoes the parking and takes the cash. Later, after employers have been given sufficient advance notice to adjust to the emergence of a parking market where spaces are allocated by prices rather than by subsidies, the cash-out requirement could be extended to all employer-paid parking. To repeat, however, the proposed cash-out requirement does not prohibit, tax, or discourage any employer-paid parking subsidy. Rather, the proposal is simply that an employer who offers to pay for an employee's parking *if the employee drives to work* must also offer to pay the same amount *if the employee rideshares to work*.

Because cash is taxable and a parking subsidy is tax-exempt, offering employees the option to cash out parking subsidies will reduce solo driving to work by less than would ending parking subsidies altogether. However, the research on commuters in Los Angeles suggests that the taxable nature of cash does not seriously diminish its attractiveness. Requiring employers to offer employees the *option* to cash out their parking subsidies will reduce traffic congestion, improve air quality, conserve gasoline, enhance employee welfare without adding to employers' costs, and increase tax revenue without increasing tax rates. All these benefits will derive simply from subsidizing *people*, not *parking*.

CASHING OUT EMPLOYER-PAID PARKING: A PRECEDENT FOR CONGESTION PRICING?

I. INTRODUCTION: UBIQUITOUS FREE PARKING

In considering the potential benefits of congestion pricing, previous research on parking pricing provides useful evidence that automobile use is surprisingly sensitive to its price. The purpose of this study is (1) to present the evidence from parking studies on the price elasticity of demand for automobile travel, (2) to explore how employer-paid parking subsidies contribute to the problems that congestion tolls are meant to solve, (3) to propose a policy to "cash out" employer-paid parking subsidies, (4) to explain California's new parking cash-out legislation, and (5) to describe some early results of the California legislation and speculate on how it may serve as a precedent for implementing congestion pricing.

Almost all parking in the United States is provided free to the user. This largely ignored and unexplained fact has profound consequences for the way we travel, the energy we consume, and the air we breathe. Because the average car is parked 95 percent of the time, the existence of ubiquitous free parking has important implications for any proposal to charge motorists for the remaining 5 percent of the time their cars are moving.

What is the evidence that most parking is free? The 1990 Nationwide Personal Transportation Survey provides information from telephone interviews of 48,400 persons in 22,300 households. For the NPTS "travel day file," each respondent was asked about all automobile trips taken during the previous day. One of the questions asked about each automobile trip was "Did you pay for parking during any part of this trip?" Table 1 shows the responses to this question. Nationwide, motorists reported receiving free parking for 99 percent of all automobile trips. In Southern California, a region with notoriously high land costs, motorists reported receiving free parking for 98 percent of all automobile trips. For work trips, 99 percent of the respondents reported paying nothing to park in both Southern California and the rest of the nation.

Another section of the NPTS, the "person file," provides responses from the same 48,400 persons to the question "Do you pay for parking at work?" (not on the previous day, but in general). In response to this question only 95 percent (rather than 99 percent) of automobile commuters reported paying nothing to park. The explanation for this small discrepancy between the "person file" and the "travel day file" is not clear. Some respondents to the "travel day" question may have paid for a monthly parking pass at work, and thus reported paying nothing to park during a work trip on the previous day. Even if some who do pay for monthly parking reported free parking for a particular day's work trip, however, this result still indicates that almost all motorists perceive parking to be free when considering the day's trip. For non-work

TABLE 1

SHARE OF ALL AUTOMOBILE TRIPS WITH FREE PARKING

<u>Trip Purpose</u>	<u>Percent of Trips with Free Parking</u>	
	<u>Southern California</u>	<u>Nationwide</u>
To or From Work	99%	99%
Family/Personal Business	98%	99%
Shopping	100%	99%
Social/Recreational	97%	98%
Visit Friends/Relatives	99%	99%
School/Church	94%	97%
Work Related Business	90%	97%
Doctor/Dentist	100%	97%
Other	100%	100%
Pleasure Driving	100%	99%
Vacation	100%	93%
TOTAL	98%	99%

Source: 1990 Nationwide Personal Transportation Survey. All data

trips there is no reason to suspect any over-reporting of free parking related to a monthly rather than daily charge for parking, yet almost all travelers still reported paying nothing to park.

Given the ubiquity of free parking, it seems clear that, in most cases, congestion tolls would charge motorists for the use of roads during the brief time they are travelling between free parking spaces. This observation is not meant to suggest that motorists should *not* pay for the use of congested roads, but rather to suggest that charging for parking and charging for road use are complementary, not competing, policies. Both types of charge can be designed to prevent overuse of a scarce resource. Congestion tolls *and* parking charges would have a much stronger effect than congestion tolls with continued free parking. Also, optimal congestion tolls should be lower, and politically more acceptable, in an environment of market-priced parking than in an environment of continued free parking.

Charging for congestion would require introducing new and technically complex forms of paying for road use, while in many cases charging for parking would require only the removal of an existing subsidy. Said another way, the failure to charge motorists for the congestion they cause is a *sin of omission*, a failure to intervene in the transportation market to raise the price of driving up to its social cost. In contrast, the failure to charge motorists for parking is often a *sin of commission*, a deliberate intervention designed to lower the price of parking below both its market value and its social cost. It should also be noted that it is far easier to charge for parking than it is to charge for congestion; parking subsidies often require clumsy validation schemes designed to shield motorists from existing market prices for parking.¹ Therefore, is it sensible to introduce new and technically complex congestion tolls without first or simultaneously reducing existing parking subsidies?

II. EVIDENCE FROM EMPLOYER-PAID PARKING

Employer-paid parking may appear to be a generous and enlightened fringe benefit, but it greatly encourages solo driving to work. The *1990 Nationwide Personal Transportation Study*

1. Even in areas where the posted price of parking appears prohibitively high, the validation of parking charges means that parking is free to the driver, and thus is no disincentive to driving. High market prices for parking encourage ridesharing only if the driver personally pays for the parking. Most parking charges, where they exist, are validated for the driver. As one personal example, I served for several years on committees of a civic organization, Los Angeles 2000, which met at the Bank of America tower in downtown Los Angeles. After every meeting, all of the dignitaries always lined up on the way out to have their parking tickets validated. After one agonizingly long meeting, a group of us were waiting in the basement garage for our cars to be delivered by the valet parking attendants (we had, as usual, all driven solo). UCLA's Chancellor Young pointed out with horror that the posted price of parking was \$2.50 for every 20 minutes (all of us had parked long and often in that underground garage, but no one had ever seemed to notice the posted parking prices). Although none of us had ever paid a penny to park, everyone instantly agreed how expensive it was to park downtown. Those high parking prices, however, never prevented any of *us* from driving alone.

found that 91 percent of commute trips to work were by automobile (up from 78 percent in 1983), and the average vehicle occupancy rate for work commute trips was 1.1 persons per vehicle (down from 1.3 in 1983). These figures imply that there were 83 vehicles driven to work per 100 employees in the United States in 1990, an extraordinary automobile dependency that is strongly stimulated by employer-paid parking.

Employer-paid parking's strong stimulus to drive to work alone can be illustrated in three ways. First, an employer's offer of free parking at work is often worth more than the offer of free gasoline for the trip to and from work. For commuters to downtown Los Angeles, Willson and Shoup (1990a) found that the average round trip to work for those who park free is 36 miles. If their gasoline mileage is 20 miles a gallon, the round trip to work consumes 1.8 gallons of gas. At \$1.50 a gallon, the cost of gas for the average round trip commute trip is \$2.70. But the average employer-paid subsidy for commuter parking in downtown Los Angeles was \$3.87 a day, or 43 percent more than the cost per trip for gasoline. An offer of free gasoline to all employees who drive to work alone would be recognized as an environmental outrage, but employer-paid parking is a much stronger financial incentive to drive to work alone. Pickrell (1991) points out that where the market price of parking is \$5 a day, employer-paid parking is a bigger subsidy for driving to work than an employer's offer to provide free gasoline *and a free car* for most commute trips.

Second, employer-paid parking subsidies dwarf the gasoline tax paid for the average work trip. The average parking subsidy of \$3.87 for a trip that consumes 1.8 gallons of gas is equivalent to a subsidy of \$2.15 per gallon of gas used. Therefore, the federal gasoline tax would have to be raised from 14 cents to \$2.29 a gallon (a 16-fold increase) merely to offset the parking subsidies now given to over 50,000 solo drivers who park free at their employers' expense in downtown Los Angeles. Thus, even an improbably huge increase in the federal gasoline tax would discourage solo driving to work by much less than employer-paid parking already encourages it.

A third way to illustrate the powerful effect of employer paid parking is to compare it to a hypothetical congestion toll. Where the average round trip drive to work is 36 miles, and the average parking subsidy is \$3.87 a day, the parking subsidy is equivalent to 11 cents per mile travelled. Thus, imposing a congestion toll of 11 cents per mile travelled would do no more to discourage commuters from driving to the Los Angeles CBD than employer-paid parking already encourages it.

Because employer-paid parking subsidizes such a large share of the total cost of driving to work, it substantially increases the amount of solo driving to work. Table 2 summarizes the results from well-documented case studies of how employer-paid parking affects commuters' travel choices. These case studies have either: (1) compared the commuting behavior of employees *before* and *after* employer-paid parking was eliminated; or (2) compared the commuting behavior of matched samples of employees *with* and *without* employer-paid parking.

TABLE 2

EMPLOYER-PAID PARKING STIMULATES SOLO DRIVING TO WORK

Location, Date, and Type of Case Study	Solo Driver Mode Share			Cars Driven to Work per 100 Employees			Price Elasticity of Demand
	Driver Pays for Parking	Employer Pays for Parking	Stimulated Increase in Solo Share	Driver Pays for Parking	Employer Pays for Parking	Stimulated Increase in Auto Trips	
Civic Center, Los Angeles, 1969 (with/without)	40%	72%	+32%	50	78	+28	-0.22
Downtown Ottawa, Canada, 1978 (before/after)	28%	35%	+7%	32	39	+7	-0.10
Century City, Los Angeles, 1980 (with/without)	75%	92%	+17%	80	94	+14	-0.08
Mid-Wilshire, Los Angeles, 1984 (before/after)	8%	42%	+34%	30	48	+18	-0.23
Warner Center, Los Angeles, 1989 (before/after)	46%	90%	+44%	64	92	+28	-0.18
Washington, D.C., 1991 (with/without)	50%	72%	+22%	58	76	+18	-0.13
Downtown Los Angeles, 1991 (with/without)	48%	69%	+21%	56	75	+19	-0.15
AVERAGE OF CASE STUDIES	42%	67%	+25%	53	72	+19	-0.15

Sources: Groninga and Francis (1969); Transport Canada (1978); Shoup and Pickrell (1980); Surber, Shoup, and Wachs (1984); Soper (1989); Miller (1991); Wilson (1991)

Table 2 first shows the effect of employer-paid parking in terms of solo driver mode share, and reveals that offering employer-paid parking shifted between 7 and 44 percent of commuters to solo driving from other modes, and on average shifted 25 percent of all commuters into solo driving.

Second, the table shows the effect of employer-paid parking in terms of the number of cars driven to work per 100 employees.² This measure reveals that employer-paid parking increased the number of cars driven to work by between 7 and 28 cars per 100 employees, and on average increased the number of cars driven to work by 19 cars per 100 employees.

Finally, the last column of Table 2 standardizes the results in terms of the price elasticity of demand for the number of cars that commuters drive to (and park at) work. The price elasticity of demand ranges from -0.08 to -0.23, and averages -0.15, which can be interpreted as meaning that a 10 percent decrease in the price of parking will increase the number of cars driven to work by 1.5 percent.³ To some observers, an elasticity of -0.15 may imply that the demand for parking and automobile use is "inelastic," and in turn suggest that the demand for automobile use responds very little to price. But in this case the simple characterization of demand for automobile use as "inelastic" conceals more than it reveals.

One way to show that an inelastic demand does not imply an unresponsiveness to price is to examine the observed effect of parking prices on the share of commuters who drive to work solo. On average, charging for parking reduced commuters' solo driver share from 67 percent to 42 percent. Therefore, the number of solo drivers decreased by 37 percent ($=25/67$). This is an enormous mode shift when compared to the results obtained by any other transportation demand management measure, such as free transit passes or guaranteed rides home for

2. This measure includes vehicles driven by carpoolers and vanpoolers as well as by solo drivers. Most of the case studies contained information on the number of employees who carpool, but not on the average carpool size. The figure of one vehicle per 2.62 carpool/vanpool commuters was used to estimate the number of cars driven to work by carpoolers; this figure was found in the 1988 *Commuter Survey* of Southern California commuters. The resulting number of cars per 100 employees is quite insensitive to moderate variations in this assumption.

3. In general, when there is a large price change, the preferred measure of elasticity of demand is the logarithmic arc elasticity. But the logarithmic arc elasticity is undefined when a price is raised from zero. Therefore, the elasticities in Table 2 are calculated as the linear arc elasticity, or "midpoint" elasticity, which approximates the average elasticity between two points along a demand curve. To calculate the midpoint elasticity, the percent change in price is defined as the absolute change in price divided by the average of the two prices between which elasticity is measured. Similarly, the percent change in quantity is defined as the absolute change in quantity divided by the average of the two quantities between which elasticity is measured. Because each case study examined the results of raising the price of parking from zero to a market price, the change in market price is equal to the market price, and the average of the two prices (zero and market) is always half of the market price. The percent change in price is thus 200 percent, and the midpoint elasticity is always half of the percent change in quantity.

carpoolers. Although the estimated price elasticity of demand for parking is only -0.15, which may *seem* low to some observers, this does *not* imply that commuters do not respond strongly to the price of parking when that response is measured by the resulting changes in solo driver share.

Another way to show that an inelastic demand for parking does not imply an unresponsiveness to price is to examine the observed effect of parking prices on the number of cars driven to work. On average, charging for parking reduced the number of cars driven to work from 72 to 53 per 100 employees. Therefore, the number of cars driven to work declined by 26 percent ($=19/72$). Again, this is an enormous reduction in automobile use when compared to what can be achieved by other policies, and it is achieved simply by eliminating an inappropriate subsidy.

The figures in Table 2 show that automobile use responds strongly to parking prices, and therefore suggest that automobile use would also respond strongly to congestion prices. But there are several reasons to believe that automobile use would respond even more to congestion prices than to parking prices.

First, the studies in Table 2 refer to commuters' responses to the price of automobile trips to work, which are the most essential trips for most people. Commuters responded to the parking price rises only by choosing a different mode for their trips, not by changing the number of trips they made or the time at which they travelled. For other trip purposes, travellers have the option to respond to a congestion toll not only by choosing a different mode, but also by shifting their travel time, or destination, or by not taking the trip. For example, in a British survey conducted by the Royal Automobile Club, motorists reported that 30 percent of their car mileage was "not at all" or "not very" important.⁴ For these less essential trips, the demand for automobile travel should clearly be more elastic than for essential commute trips.

Second, the studies in Table 2 refer to responses to an increase in the price of commuter parking at *one* work site, in an environment where almost all parking for all other purposes remained free (as shown in Table 1). The demand for parking at any one work site depends not only on the price of parking at that site, but also at other sites. If commuters have already arranged their lifestyles to accommodate to a world where almost all parking is free, and the price of parking increases at the one location to which they must travel to earn their living, they will cut back on automobile use by much less than they would if *all* parking prices were raised to their market values. If all parking prices increased to their market levels, families would make different choices regarding automobile ownership, and perhaps also residential and work locations. These general equilibrium changes are not captured in commuters' responses to a change in the price of parking at one work site. Thus the price elasticity of demand with respect

4. This finding was reported by Peter Jones, Director, Transport Studies Group, University of Westminster, London. It was extracted from the *Review of Available Evidence on Public Reactions to Road Pricing* (p. 104), prepared for the London Transportation Unit of the U.K. Department of the Environment.

to an increase in the price of *all* parking (or of all automobile travel) should be greater than the figures presented in Table 2 for an increase in the price of parking at a single work site.⁵

Third, the studies in Table 2 refer to travellers' responses to a rise in only one component of a trip's price. A 10 percent change in the price of the entire trip should lead to a larger response than a 10 percent change in the price of only one component of the trip. It is important to remember that the elasticity estimates in Table 2 refer to commuters' responses to changes in the price of only one component of their trip (parking price), and are therefore smaller than the elasticity of demand with respect to changes in the full price of automobile trips.

Three of the studies reported in Table 2 refer to "before/after" cases where it was possible to observe commuters' response to a rise in the price of parking; the other four refer to "with/without" case studies comparing the behavior of otherwise similar employees who differed only in regard to whether or not they paid for parking. But none of the three "before/after" cases involved a "pure" price increase of the sort that would reveal the "true" price elasticity of demand for parking as usually defined. In Ottawa, the government stopped providing free parking to its employees, but raised the price to only 70 percent of the market value, not to 100 percent. Also, some employees had not been offered free parking before the price rise, so their price of parking did not rise at all. Both of these factors would be expected to reduce the resulting observed change in mode split, and the Ottawa case does exhibit the smallest observed price elasticity. On the other hand, in the Warner Center and Mid-Wilshire cases, the price of parking increased only for solo drivers; carpoolers continued to park free. This form of parking price increase (for solo drivers only) produced the largest shifts out of solo driving (44 percent and 34 percent). Removing these three "impure" cases of price change scarcely alters the average results, however, because the below-average response in Ottawa seems to have balanced the above-average responses in Los Angeles. The average price elasticity of demand for parking for the remaining four case studies is -0.14 (rather than -0.15 for all seven cases). The average change in solo share is 23 percent for the four remaining cases (rather than 25 percent for all seven cases). And the average change in the number of automobiles driven to work is 20 per 100 employees for the four remaining cases (rather than 19 for all seven cases).

5. It may seem unconventional to assert that the price elasticity of demand for parking at one site should be lower than the price elasticity of demand for parking at all sites. The conventional argument that is that if only one firm in an industry raises its price, the observed elasticity will be greater than if all firms in the industry raise their prices. This is so because customers can purchase substitutes for any one firm's product from all other firms in the same industry, but cannot so easily purchase substitutes for a whole industry's product from other industries. But that firm-versus-industry argument applies when all firms in the industry produce similar and competing products or services, and parking at different locations may be seen as complements, not substitutes for one another. Therefore, the lower the price for parking elsewhere, the lower is the elasticity of demand for parking at a work site to which commuters must travel.

One particularly notable result emerged from the Mid-Wilshire case study where parking was free to all drivers before the change. After the change, the price of parking rose to \$57.50 per month for solo drivers but remained free to carpoolers. The carpool share rose from 17 percent to 58 percent, but the transit share declined from 38 percent to 28 percent. Why did raising the price of parking for solo drivers reduce the transit mode share? The answer is that solo drivers began to seek carpool partners in order to park free, and invited former transit riders to share their cars. This finding has important implications for proposals to scale congestion prices for vehicle occupancy. If carpools are exempted from congestion tolls, the result may be to increase the carpool share and decrease the transit share. This is not an undesirable result, of course, because peak-hour transit service is often overcrowded and has a high marginal cost. Shifting some peak-hour transit standees into the empty seats of automobiles could spread transit demand more evenly over the day, and reduce transit operating deficits.

The studies summarized in Table 2 all refer to one kind of automobile trip: the trip to work. This is the single most important trip purpose, although it is often noted that its relative importance has been declining. Data from the 1990 Nationwide Personal Transportation Survey, in Table 3, show that, nationwide, work trips represent 44 percent of all automobile trips made during peak hours (and 45 percent in Southern California). Work trips tend to be longer than non-work trips, so they account for a larger share of vehicle miles travelled than of trips. Nationwide, work trips represent 48 percent of vehicle miles travelled during peak hours (and 50 percent in Southern California). Thus, employer-paid parking subsidies potentially influence about half of all automobile travel during peak hours, when congestion is of greatest concern. Clearly, employer-paid parking heavily subsidizes many of the same automobile trips for which congestion pricing is being proposed.

TABLE 3

CHARACTERISTICS OF AUTOMOBILE TRIPS

<u>Trip Purpose</u>	Time and Purpose of Automobile Trips					
	Nationwide			Southern California		
	<u>Peak</u>	<u>Off-Peak</u>	<u>Total</u>	<u>Peak</u>	<u>Off-Peak</u>	<u>Total</u>
Work	44%	21%	30%	45%	24%	32%
Non-Work	56%	79%	70%	55%	76%	68%

<u>Trip Purpose</u>	Average Trip Distance (Miles)					
	Nationwide			Southern California		
	<u>Peak</u>	<u>Off-Peak</u>	<u>Total</u>	<u>Peak</u>	<u>Off-Peak</u>	<u>Total</u>
Work	11.1	12.3	11.6	12.9	14.1	13.5
Non-Work	9.4	8.8	8.9	10.3	8.8	9.2

<u>Trip Purpose</u>	Total Vehicle Miles Travelled					
	Nationwide			Southern California		
	<u>Peak</u>	<u>Off-Peak</u>	<u>Total</u>	<u>Peak</u>	<u>Off-Peak</u>	<u>Total</u>
Work	48%	27%	36%	50%	33%	40%
Non-Work	52%	73%	64%	50%	67%	60%

Source: 1990 Nationwide Personal Transportation Survey. All data are from the "travel day file."

III. EMPLOYER-PAID PARKING AS TAX-EXEMPT FRINGE BENEFIT

What explains the ubiquity of employer-paid parking? The chief explanation is that the Internal Revenue Code's peculiar asymmetrical rule for employer-paid parking subsidies clearly offers employers a strong incentive to pay for their employees' parking. If the *employee* pays for parking at work, the employee cannot deduct the parking charge from taxable income as a work-related expense. But if the *employer* pays for the employee's parking at work, the Code has classified the payment as a tax-exempt working condition fringe benefit. This special rule for *employer*-paid parking subsidies has been a unique, deliberate, and specially targeted tax exemption that has had the unfortunate, unintended, and largely unnoticed effect of stimulating a huge increase in the number of commuters who drive alone to work.

It is particularly important to understand the asymmetry of the tax exemption for *employer*-paid (but not *employee*-paid) parking in order to understand the almost irresistible incentive it provides for employers to pay for their employees' parking. The tax exemption for employer-paid parking does not simply reduce the cost of commuter parking by the employee's marginal income tax rate in the same way that, for example, the tax deduction for contributions to charity reduces the cost of contributing to charity. To take advantage of the tax-exemption for commuter parking, the *employer* has to pay for the employee's parking. No tax deduction is allowed if the employee pays for the parking. Therefore, the tax exemption is of value *only* to the extent that the employer pays for the employee's parking. Although a conventional tax deduction reduces the price of the deductible item only by the taxpayer's marginal tax rate, the unique tax exemption for *employer*-paid (but not for *employee*-paid) parking has inadvertently shifted the responsibility for paying for almost all commuter parking entirely from the employee to the employer, and has thus reduced the cost of almost every *employee's* cost of parking to zero. Further, the revenue loss created by this tax exemption must be made up by raising taxes elsewhere. Thus, all American taxpayers end up paying for a subsidy that congests their traffic, pollutes their air, and wastes their energy.

The tax-induced 100 percent reduction in the price for parking at work would not be catastrophic if the goal of public policy were to encourage as many commuters as possible to drive to work alone. But of course the case is exactly the opposite. As a remedy for the serious problems caused by employer-paid parking, ridesharing and mass transit advocates have argued for years that the tax code should be revised to exempt employer-paid transit and ridesharing subsidies from taxation, in the same way that employer-paid parking subsidies are tax exempt. The Comprehensive Energy Policy Act of 1992 took a short step in this direction by amending the special rule defining employer-paid parking as a "working condition fringe," and in its place creating a new category of tax-exempt fringe benefit called a "qualified transportation fringe." A new Subsection (f) was added to Section 132 of the Internal Revenue Code, which (effective January 1, 1993) defines the new tax-exempt transportation fringe benefit in the following way:

QUALIFIED TRANSPORTATION FRINGE

(1) IN GENERAL - For purposes of this section, "qualified transportation fringe" means any of the following provided by an employer to an employee:

- (A) Transportation in a commuter highway vehicle [a van that seats at least six adults not including the driver] if such transportation is in connection with travel between the employee's residence and place of employment.
 - (B) Any transit pass.
 - (C) Qualified parking. [The term "qualified parking" means parking provided to an employee on or near the business premises of the employer or on or near a location from which the employee commutes to work by transportation described in subparagraph (A), in a commuter highway vehicle, or by carpool.]
- (2) LIMITATION ON EXCLUSION - The amount of the fringe benefits which are provided by an employer to any employee and which may be excluded from gross income . . . shall not exceed -
- (A) \$60 per month in the case of the aggregate of the benefits described in subparagraphs (A) and (B) of paragraph (1), and
 - (B) \$155 per month in the case of qualified parking.

In effect, the new "qualified transportation fringe" exempts the first \$155 a month of employer-paid parking subsidies from income taxation, and exempts the first \$60 a month of employer-paid vanpool or transit subsidies from income taxation. Both tax exemptions will be indexed to the cost of living. The rationale for the \$155 per month cap on tax-exempt parking subsidies is that taxes on employer-paid parking subsidies over \$155 per month will raise enough new tax revenue to replace the tax revenue lost by exempting the first \$60 per month of employer-paid transit and vanpool subsidies. Obviously, the estimate that a \$155 cap on tax-exempt parking subsidies will raise the right amount of revenue is little more than a guess, because there are no data on how many employees now receive employer-paid parking subsidies greater than \$155 per month, or on the total value of such subsidies that might become subject to taxation. Also, there is great uncertainty about how many employers will choose to offer tax-exempt transit and vanpool subsidies up to \$60 per month, and how many employees will accept these offers.

This new cap on tax-exempt parking subsidies at \$155 per month and the increase in the cap on tax-exempt vanpool and transit subsidies to \$60 per month are clearly important changes. But setting the cap on tax-exempt parking subsidies at 258 percent of the cap on tax-exempt vanpool and transit subsidies clearly continues the tax bias in favor of employer-paid parking (and thus in favor of driving to work). Further, there is no tax exemption whatever for employer-paid carpool subsidies, or for employer-paid incentives to walk or bicycle to work.

Most significantly, the Code's new category of "qualified transportation fringe" retains the strong asymmetrical incentive for employers to pay for their employees' parking. It is still the case that if the *employee* pays for parking at work, the employee can not deduct the parking charge from taxable income as a work-related expense. But if the *employer* pays for the employee's parking at work, the Code classifies the payment (up to \$155 per month) as a tax-exempt "qualified transportation fringe." And the qualified transportation fringe continues to exempt employer-paid parking from more than just the Federal income tax. The exemption is automatically extended to Social Security taxes, state income taxes, unemployment insurance

taxes, and all other payroll taxes. When all these additional tax rates (shown in Table 4) are taken into account, the employer's offer to pay for the employee's parking can more than double the after-tax value of the employer-paid parking subsidy to the employee. Even after the recent reform, parking remains tax-exempt when paid by the employer but taxable when paid by the employee. This peculiar treatment of parking at work (tax-exempt if employer-paid, taxable if employee-paid) continues to make it extraordinarily tax-efficient for employers to continue paying for all their employees' parking at work.

Extending the tax exemption to transit passes and vanpool subsidies will help to counteract the continued tax exemption for parking subsidies, but this new tax exemption will probably not have much effect on commuter travel patterns. Employer-paid rideshare and transit subsidies were previously tax-exempt up to \$21 a month, but most employers did not offer their employees even this small amount, so it is not clear that increasing the allowable tax-exempt amount will induce many employers to offer a larger subsidy. Also, there is very convincing evidence from case studies to show that when parking is free, it is very difficult to lure commuters out of cars by subsidizing mass transit.⁶ Finally, the new "qualified transportation fringe" does not exempt from taxation any employer-paid subsidies for other alternatives to solo driving, such as carpooling, telecommuting, bicycling, or walking to work.

Despite the growing body of evidence (summarized in Table 2) that employer-paid parking seriously aggravates traffic congestion and air pollution, and greatly stimulates gasoline consumption, the Internal Revenue Code still gives its most favored treatment to employer-paid parking subsidies, and thus to driving to work, even after the important reform contained in the 1992 Energy Act. This new legislation--designed specifically to save energy--has left the tax exemption for employer-paid parking more than two and a half times larger than the tax exemption for employer-paid transit subsidies, which proves how difficult it is to reduce the tax exemption for employer-paid parking. One reason for this political difficulty is that the tax exemption for employer-paid parking benefits so many workers, at all income levels. Although the tax exemption provides the greatest benefits to those in higher income tax brackets, eliminating it would affect many low-wage employees as well.

Finally, quite aside from the money involved, parking privileges often signify one's real status within an organization. Burt Reynolds once observed that, in Hollywood, your parking space knows before you do when you're out of favor with the studio; someone else's name is on the little sign when you try to pull into "your" reserved space. At UCLA, the Chancellor confers the rare and coveted Blue X parking permit as the University's equivalent to a knighthood, granting the seigniorial right to park anywhere on campus at any time. Berkeley rewards Nobel Prize winners with their choice of a reserved parking space anywhere on campus; since only Nobelists are awarded reserved parking spaces, the name on the parking sign is *ipso facto* evidence of having won the Prize.

6. For example, see Surber, Shoup, and Wachs (1984).

IV. A PROPOSED SOLUTION: CASHING OUT EMPLOYER-PAID PARKING

Given the extreme sensitivity of the issue, is there any possible public policy that can achieve the benefits of ending the tax exemption for employer-paid parking, without provoking the inevitable fierce opposition to taxing the substantial parking subsidies now given to so many commuters? The popularity and success of a recent program in Los Angeles suggests that the answer to this question is "Yes." The City of Los Angeles took an imaginative step in the right direction in 1989 when it adopted its employee transit subsidy ordinance. This ordinance requires that:

Each employer in the City that offers free or subsidized parking to any employee . . . shall offer a \$15 (fifteen) per month transit subsidy to each of its employees for their use in commuting to and from the employer's work-site.

The political rationale for this ordinance was quite simple. If an employer offers a parking subsidy to an employee who drives to work, the employer should also allow an employee to use the subsidy to ride mass transit if the employee doesn't drive to work. The ordinance encountered no opposition when it was enacted, and none since, because it is very difficult for employers to argue that they *should* restrict their employees to using employer-paid travel subsidies only for parking (and thus for driving), but not for riding mass transit. The figure of \$15 per month for the required transit alternative was chosen for the Los Angeles ordinance because it was then the maximum transit subsidy that was exempt from federal income tax. This required transit alternative to parking subsidies is a sensible, sensitive, and minimally intrusive public policy that is intended to expand the commuter's options beyond the usual choice between a parking subsidy or nothing. The ordinance does not prohibit or discourage employer-paid parking; it simply says that an employer cannot confine its employees to the choice between a parking subsidy or nothing.

The precedent set by the Los Angeles transit subsidy requirement suggests a logical next step to further expand the commuter's options beyond the usual choice between free parking or nothing. The required alternative to employer-paid parking could be expanded to give an employee the option to receive, in lieu of the parking subsidy, the fair market value of the parking subsidy, either as a mass transit or ridesharing subsidy, or as a cash commute allowance. But every local government should not have to enact its own parking cash-out requirement. Instead, the Federal government could achieve the same result by amending the Internal Revenue Code's definition of tax-exempt "qualified parking" as follows:

QUALIFIED PARKING - The term "qualified parking" means parking provided to an employee on or near the business premises of the employer . . . if the employer offers the employee the option to receive, in lieu of the parking, the fair market value of the parking, either as a taxable cash commute allowance or as a mass transit or ridesharing subsidy.

The roman text is the existing definition of tax-exempt "qualified parking" in Paragraph (5) of Section 132(f) of the Internal Revenue Code, and the italic text is the proposed change.

Changing the Code's definition of "qualified parking" to require the *option* of cash or a mass transit or ridesharing subsidy in lieu of a parking subsidy would obviate the need for thousands of local governments to enact their own individual ordinances to require employers to offer alternatives to parking subsidies. (Because cash can be used to pay for any form of mass transit or ridesharing, the term "cash" is hereafter meant to include mass transit and ridesharing subsidies as well.) The federal income tax exemption for employer-paid parking creates the incentive for employers to offer free parking in the first place, so it should not be left to all local governments to design and implement a myriad of individual policies that are all directed solely toward countering this single inappropriate tax incentive.

The proposed policy of requiring an employer to offer employees the option to choose cash in lieu of any offered parking subsidy has several important advantages:

1. **Free Parking Will Have an Opportunity Cost**

When commuters are offered the choice between free parking or nothing, the parking has no opportunity cost. But asking commuters to choose between a free parking space *or* its cash value makes it clear that parking has a cost, which is the cash not taken. The foregone cash would be a new "price" for taking the "free" parking, a price that would increase the perceived cost of driving to work. If a commuter foregoes the cash and continues to park "free," the commuter has in effect "spent" the cash on parking. Therefore, when the opportunity cost becomes explicit, some commuters who are now offered free parking and drive to work alone would begin to take the cash and rideshare instead. The cash option would most strongly tempt commuters to rideshare to worksites where parking prices are highest. Because parking is usually most expensive in the most congested areas, the option to take cash instead of a parking subsidy would automatically target its strongest incentive to rideshare exactly where this incentive is most needed. And because an employee can always use cash to pay for non-transportation expenses, the offer of cash in lieu of parking also rewards the most environmentally benign forms of commuting--walking, cycling, and mass transit--as alternatives to driving.

The proposal that employers cannot confine employees to take a travel subsidy only in the form of parking will also encourage employers to take advantage of the newly enacted \$60 per month tax exemption for employer-paid vanpool and mass transit subsidies. Almost all employers now subsidize their employees' parking, but most employers have not taken advantage of the existing option to offer a \$21 per month transit subsidy.⁷ If employers are *not* required

7. For example, UCLA spent \$54 million to build its most recent campus parking structure (at a cost of \$27,000 per parking space added), but has never offered its employees the available option of a tax-exempt \$21 per month transit subsidy in lieu of a parking space.

to offer their employees the option to choose a tax-exempt transit subsidy in lieu of a tax-exempt parking subsidy, many will simply continue to offer the free parking to which their employees are accustomed. Thus, cashing out parking subsidies will increase the effectiveness of vanpool and mass transit subsidies.

2. Cashing Out Will Benefit Employees

The proposal to cash out employer-paid parking subsidies avoids the seemingly intractable problem that voters don't like new taxes and motorists don't like to pay for something that they formerly got free. Most proposals for using parking pricing to reduce solo driving presume a need to "cause discomfort" for solo drivers.⁸ But the option of cash in lieu of a parking subsidy would not cause discomfort for any commuter. Instead, commuters would receive a new option, the cash alternative. Rather than restricting an employee's options, cashing out *adds* a new option for many employees who now face a take-it-or-leave-it choice between a parking subsidy or nothing. Employers could continue to offer tax-exempt parking subsidies, so long as they broaden the offer to allow the employee the *option* to take the taxable cash value of the parking subsidy in lieu of the parking subsidy itself. Thus, employees who prefer cash or a ridesharing subsidy to a parking subsidy are clearly better off as a result of this policy, and those who continue to take the tax-exempt parking subsidy are unaffected (except that they will enjoy cleaner air and less congestion while driving to work). Nevertheless, although it sugar-coats the pill, the proposal to require cash as an option in lieu of free parking means that commuters who drive to work will "pay" for their "free" parking, because commuters who forego the cash in favor of the parking are in fact spending the cash to pay for the parking.

Transportation economists, and especially congestion pricing theorists, usually focus on sophisticated ways to make motorists pay for the social costs their driving causes. In contrast, cashing out employer-paid parking does not charge commuters for using parking, but rather pays them in-lieu cash for not using parking. Cashing out parking subsidies is like paying commuters to stop driving to work alone--a buy-back, not a take-away. Offering employees the *option* to cash out their parking subsidies would be a popular step in the right direction because, rather than punish commuters for doing the wrong thing, it rewards them for doing the right thing.

3. Cashing Out Will Cost Employers Little or Nothing

The only cost to an employer when an employee chooses to cash out a tax-exempt parking subsidy is the payroll tax paid by the employer on the cash value of the parking subsidy. If the employee chose a tax-exempt vanpool or transit subsidy, however, there would be no payroll taxes at all on this alternative. And if the small burden of payroll taxes on cash were considered a serious objection to cashing out parking subsidies, this objection can be met by defining the cash-out value of a parking subsidy as the cash value that, when payroll taxes are added, equals the fair market value of the parking subsidy. For example, if the payroll tax rate

8. For example, see Koppelman, Schofer, and Bhat (1991, p. I-3).

is 12 percent, employers could offer 89 cents in cash per \$1 of parking subsidy, and the payroll tax on the 89 cents would raise the employers' cash cost to \$1. Alternatively, cashed out parking subsidies could be exempted from payroll taxes. In either of these cases, an employer is no worse off when an employee chooses cash in lieu of a parking subsidy because the cash alternative is by definition no more costly than the parking subsidy.

Note that the proposal is for the employer to offer the cash alternative only to each employee who is offered a parking subsidy, not to all other employees.⁹ And the size of each employee's cash alternative is equal to the parking subsidy offered to that employee, so if some employees are offered smaller parking subsidies than other employees, their required cash alternative would also be smaller. Nevertheless, a potential cost to employers could occur because there are some employees who are now offered employer-paid parking but who nevertheless do not drive to work. These currently ridesharing employees would become eligible to receive the cash alternative to the employer-paid parking that they already do not take, and the employer would not save anything on foregone parking with which to finance the new cash payment. But there can be only a tiny percentage of such employees. The 1990 Nationwide Personal Transportation Survey found that 91 percent of the American work force commutes to work by car (Hu and Young, 1992). And one reason that many of the remaining 9 percent do not commute by car is probably that they are among the few employees who are not offered employer-paid parking (and who therefore would not have to be offered in-lieu cash). Of those very few who are now offered free parking but do not take it, some are certainly already offered an alternative ridesharing subsidy (such as a bus pass), and for these employees the employer's cost of the cash option would be only the difference (if any) between the cash option and the cost of the existing rideshare subsidy. For these reasons, any added cost to employers of offering the cash option to existing ridesharers would have to be very small.

Still, it must be admitted that the requirement to offer in-lieu cash may cause fear of increased costs for employers who (1) offer employer-paid parking, (2) do not offer equivalent ridesharing subsidies, and (3) nevertheless have a significant number of employees who turn down the offer of a parking subsidy and rideshare to work instead. In this unusual case, the added cost of offering cash to current ridesharers who are already offered but have turned down a parking subsidy must be considered the inevitable and wholly justified cost of moving to a commute subsidy policy that does not discriminate against ridesharers. Offering smaller subsidies to ridesharers than to *otherwise identical* solo drivers is discriminating against ridesharers in the same way that offering lower wages to women than to otherwise identical men is discriminating against women. At the very least, the tax code should be amended to discourage this discriminatory anti-ridesharing behavior, *which it now encourages!* Arguing against the required cash option on the grounds that it will increase the employer's cost is the

9. By contrast, the Los Angeles transit subsidy ordinance requires an employer who offers a parking subsidy to *any* employee to offer a \$15 per month transit subsidy to *all* employees. This blanket requirement is far more intrusive than a requirement that only employees who are offered a parking subsidy must be offered a transit subsidy, and still the Los Angeles transit subsidy requirement has aroused no opposition from employers.

same as arguing that employers *should* offer smaller subsidies to ridesharers than to otherwise identical solo drivers. Who would be shameless enough to make such an argument?

Some employers might choose to comply with the cash-option requirement by converting their existing parking subsidies for solo drivers into smaller but uniform travel allowances for all employees, with no increase in the employer's total travel subsidy. An advantage of the cash-option requirement is that these employers could blame the government for any resulting redistribution of subsidies from solo drivers to ridesharers by claiming that "it's the law."¹⁰

A final reason to believe the cash-option requirement would not burden employers is that it treats all employers equally. By comparison, requirements for employer-based trip reduction plans, such as Regulation XV in Southern California, place onerous obligations on employers of over 100 employees, while placing no obligations on employers of fewer than 100 employees. Employers might be much more willing to offer cash in lieu of a parking subsidy if they knew the tax code required *all* employers to make the same offer; no employer would be put at any competitive disadvantage.

4. Cashing Out Will Not Unnecessarily Intrude on Employers' Decisions

Some might argue that even if it would not significantly increase employers' costs, the cash-option requirement would inappropriately intrude on employers' decisions about employee compensation. But the current tax exemption for employer-paid parking *already* intrudes on employers' decisions about employee compensation. By subsidizing parking, employers are simply carrying out a public policy embedded in the Internal Revenue Code. *Employers* are not the cause of the problem; instead, public policy is the cause of the problem. The cash-option requirement is designed to remedy a flaw in the Internal Revenue Code, not to remedy any misbehavior by employers.

Paragraph (4) of Section 132(f) of the Internal Revenue Code, which defines employer-paid parking as a tax-exempt transportation fringe, contains the provision that:

BENEFIT NOT IN LIEU OF COMPENSATION.--Subsection (a)(5) [which excludes qualified transportation fringe benefits from an employee's gross income] shall not apply to any qualified transportation fringe unless such benefit is provided in addition to (and not in lieu of) any compensation otherwise payable to the employee.

This provision means that if an employer *does* offer an employee cash in lieu of a parking subsidy, the parking subsidy itself does not qualify as a tax-exempt fringe benefit, and becomes taxable. This perverse provision *prohibits* employers from offering taxable cash in lieu

10. This desire to blame some higher power for doing what one secretly believes is the right thing is similar to a professor's telling a student that, although the professor would *personally* be willing to let the student take an "Incomplete" in a course for no good reason, strict University regulations unfortunately prohibit it.

of a tax-exempt parking subsidy. If anyone is concerned about intrusions on employers' decisions regarding employee compensation, Paragraph (4) looks like an intrusion recommended by OPEC lobbyists. Strange to say, it was placed in the Internal Revenue Code by the Comprehensive Energy Policy Act of 1992!

In effect, the proposed cash-option requirement would turn Paragraph (4) on its head: if an employer *does not* offer cash in lieu of a parking subsidy, the parking subsidy itself would not qualify as a tax-exempt fringe benefit, and would become taxable.

Compared to other solutions to the employer-paid parking problem, the cash-option requirement intrudes least in the employer's decisions about employee compensation. Employers who want to subsidize parking without offering an equivalent subsidy for ridesharing could continue to do so. The difference introduced by the cash-option requirement is only that the Internal Revenue Code would no longer reward this discriminatory behavior with a tax exemption for the parking subsidy.

The proposed change is simply that, for the parking subsidy to be tax-exempt, an employer who offers to subsidize an employee's parking *if the employee drives to work* must also offer to pay the same amount *if the employee rideshares to work*. Few employers would argue that the Internal Revenue Code *should* encourage them to confine their commuting subsidies to parking (and thus to employees who drive to work). Also, most employers would find it difficult to argue publicly that employees should *not* be allowed to choose a ridesharing subsidy as an alternative to an offered parking subsidy.

5. **Cashing Out Will Especially Benefit Low-Income and Handicapped Employees**

Another desirable feature of the required cash option is that, because they are in the lowest tax brackets, the lowest-paid workers would gain the most after-tax cash from a taxable cash allowance in lieu of employer-paid parking. Also, the cash allowance would be larger in proportion to a lower income, so the cash option would clearly improve the relative well-being of the lowest-paid workers. Further, some employees are unable to benefit from the offer of employer-paid parking because they have a physical handicap that prevents them from driving to work. Offering handicapped employees the option to choose the cash value of any offered parking subsidy will enable them to benefit from parking subsidies to the same extent that nonhandicapped employees can. These points directly respond to the conventional criticism that charging for parking is unfair because it would harm either low-income workers or those who need to drive to work because of family or personal circumstances. Therefore, on equity grounds, offering employees the *option* to cash out their parking subsidies seems clearly superior to offering employees the customary choice between a parking subsidy or nothing. .

6. Cashing Out Will Reveal the Size and Distribution of Parking Subsidies

A simple way to implement and enforce the requirement to offer employees the option of taxable cash in lieu of a tax-exempt parking subsidy would be to require employers to report any tax-exempt parking subsidies on their employees' payroll forms in the same way they already report other tax-exempt fringe benefits (such as health care insurance contributions). This reporting requirement would not only tell employees the amount of the cash alternative available to them in lieu of their parking subsidy, but would also provide previously unobtainable data on the extent of total employer-paid parking subsidies, both locally and nationally. Further, the reporting requirement would make explicit--to employers, to employees, and to policy makers--what parking subsidies go to whom. This "daylight" feature might also focus serious attention on devising fairer and more efficient commuter travel subsidy policies that go beyond (but would not be required by) the obligation to offer cash in lieu of parking subsidies.

7. Cashing Out Will Strengthen Central Business Districts

Those who are particularly concerned about the competitive position of central business districts might question whether a seemingly impartial policy of requiring all employers to offer their employees the option to cash out employer-paid parking might somehow harm employers in central business districts where parking prices are highest. But there are several compelling reasons to believe that cashing out employer-paid parking will make central cities relatively more, not less, attractive places to work, shop, and conduct business, compared to suburban locations.

Many downtown employers feel that they must offer their employees free parking because the higher cost of downtown parking would otherwise dissuade potential employees from choosing to work downtown. But employer-paid parking simply equalizes the cost of parking between downtown and suburban work sites (by making it free to the commuter in both places), and does nothing to make a downtown location superior to a suburban location for workers. Because employers must pay more to provide employee parking in central business districts than in suburban locations, employers could offer more cash in lieu of a parking space to downtown employees, without any increase in cost to the employer. This higher cash option for downtown employees would make downtown work sites relatively more attractive than suburban work sites, at least for those who rideshare. And because downtown work sites are more accessible by mass transit, downtown employees would be better placed to take advantage of the cash option by shifting to mass transit, especially with the new \$60 per month tax exemption for employer-paid mass transit subsidies. Similarly, downtown work sites are also more accessible by carpools because a high density of employment implies a high density of potential fellow carpoolers. Also, employees who prefer to take the cash and cease driving to work would reduce congestion on routes to downtown, so downtown work sites would become more accessible to everyone, including even those who continue to drive to work alone.

Single-occupant vehicle commuting to work typically accounts for 65 to 85 percent of the total traffic volume to and from downtown during peak hours (Beebe, 1991). One of the current

disadvantages of a central location is the traffic congestion on all the routes leading to the CBD, so when commuters voluntarily choose cash to rideshare if given the cash option, the resulting reduction in congestion can significantly improve the accessibility of downtown employment locations. In addition to the reduction in peak-hour traffic, parking spaces vacated by peak hour commuters would become available to off-peak visitors, including shoppers, business clients, and tourists, who would find downtown relatively easier to visit. For all these reasons, any fears that cashing out employer-paid parking would weaken the central business district seem quite misplaced.

8. Cashing Out Will Yield a Tax Revenue Windfall

In making the choice between a parking subsidy or its cash equivalent, employees would have to consider that the cash is taxable, while the parking subsidy is not. Many employees, however, might still prefer after-tax cash to a free parking space. For example, recall the earlier example where your employer pays \$100 a month to provide you a free parking space at work. You are in the 30 percent marginal income tax bracket. If your employer offers you a taxable \$100 payment in lieu of the tax-exempt \$100 a month parking space, your *after-tax* cash would be \$70 a month. Thus, you would "pay" \$70 a month to park at work. If you then choose cash in lieu of the parking, your choice *proves* that your employer's in-kind parking subsidy of \$100 a month was worth less to you than \$70 a month in cash.

An in-kind parking subsidy must be a very inefficient way to help an employee get to work if the employee prefers the *after-tax* cash value of what it costs the employer to provide the parking. This inefficiency of providing in-kind parking subsidies was earlier referred to as the *private waste* caused by employer-parking, which is separate from and additional to all the *public harm* of congestion and pollution caused by employer-paid parking. Offering employees the *option* to take cash in lieu of a parking subsidy reduces this private waste.

When a commuter does voluntarily choose taxable cash rather than a tax-exempt parking subsidy, federal and state income tax revenues increase. In the case where an employee chooses \$70 in after-tax cash rather than a \$100 tax-exempt parking space, the employee pays \$30 extra in taxes and is still better off as a result. *This increase in tax payments does not result from any increase in tax rates, or from any taxation of previously tax-exempt parking subsidies.* Rather it results from voluntary action: cashing out an inefficient in-kind parking subsidy that costs the employer \$100 to provide but is worth less than \$70 to the employee. Put most simply, cashing out inefficient parking subsidies converts economic waste into increased tax revenue and enhanced employee welfare, at little or no cost to the employer. The tax revenue windfall is an additional benefit above and beyond any reductions in air pollution, traffic congestion, and energy consumption that also result when a commuter voluntarily chooses to cash out a parking subsidy.

The federal and state income tax revenue bonus is funded solely by reducing the economic waste that occurs when, faced with the typical choice between an employer-paid parking space or nothing, you take a parking space that you value at much less than what your

employer pays to provide it. The size of the waste created by employer-paid parking is measured by the difference (if any) between what your employer pays to provide the space and the cash value you place on receiving the space. In the context of cashing out employer-paid parking, the value you place on a parking space is the lowest price at which you would "sell" the parking space back to your employer.¹¹

For example, suppose that \$60 a month is the lowest price at which you would sell your parking space back to your employer. In this case, you would choose the option of \$100 in taxable cash, receive \$70 in after-tax cash, and still be \$10 a month better off than when you took the \$100 a month in-kind parking subsidy. Thus, the *option* to cash out your parking subsidy eliminates an economic waste of \$40 a month, of which the government captures \$30 as an increase in tax revenue, and you keep \$10 as an increase in your own welfare.

The taxability of cash in lieu of a parking subsidy reduces, but by no means eliminates, the effectiveness of offering the cash alternative as an incentive to rideshare. The taxability of cash is *not* an argument against offering cash in lieu of parking subsidies. If commuters freely choose taxable cash because they value the after-tax income more than a tax-exempt parking subsidy, how can anyone else argue that they have made the wrong choice? Indeed, choosing the *taxable* cash equivalent of a *tax-exempt* free parking space proves beyond *any* doubt that the parking space is worth considerably less to the employee than it costs the employer.

The research summarized in Table 2 clearly shows that the cost of parking, previously hidden from many commuters by parking subsidies, profoundly influences commuters' mode choices. Many commuters, rather than pay for parking, switch from solo driving to another mode when asked to pay for parking spaces that they were formerly provided free. Thus, the option of cash in lieu of a parking subsidy would be a strong incentive to carpool, ride mass transit, bicycle, or walk to work. By allowing parking prices to influence commuting choices, requiring employers to offer the in-lieu cash option would reduce traffic congestion, air pollution, and gasoline consumption, and would increase federal and state income tax revenue. *It would do all this simply by empowering commuters to make travel choices in accord with their own preferences about how they wish to spend their own income.*

It might be argued that some commuters will choose cash in lieu of an employer-subsidized parking space, pay taxes on it, and then use the after-tax income to park in a cheaper space, without ceasing to drive to work alone. In that case, the employee is better off (because the employee chose that option), the employer is no worse off (because the in-lieu cash is no greater than the former parking subsidy), and federal and state income tax revenues increase. Who could possibly object to that outcome? Again, the *option* to cash out an inefficient parking subsidy (worth much less to the employee than it costs the employer) converts economic waste into both increased employee welfare and increased government revenue.

11. This price at which you would be willing to sell the space may be higher than the price you would be willing to pay for the parking space if your employer did not provide it "free."

How much would tax revenues increase? The following calculations, which are summarized in Table 4, suggest the considerable revenue potential of the required cash option. There were 110 million employees on civilian nonagricultural payrolls in the United States at the end of 1990 (*Economic Report of the President, 1991*, p. 334). According to the *1990 Nationwide Personal Transportation Survey*, 91.4 percent of the American work force (or 100.5 million workers) commute to work by car, and the average vehicle occupancy for work trips is 1.1 persons per vehicle. Thus, 91.4 million cars were driven to work on every business day in 1990. If 90 percent of auto commuters park free at work (as shown in Section I), these data imply that approximately 82 million cars receive employer-paid parking. If the average cost of providing this employer-paid parking is \$30 per month, the total value of all tax-exempt employer-paid parking subsidies is \$30 billion per year.¹² If 20 percent of existing auto commuters who now get free parking choose the taxable cash alternative (or a mass transit or vanpooling subsidy greater than \$60 per month), taxable income would increase by \$6 billion per year. At an effective marginal tax rate on this income of 20 percent, the increase in tax revenue would be \$1.2 billion per year. *This revenue windfall would occur without increasing any tax rates, and without removing the existing tax exemption of employer-paid parking.* As argued earlier, this revenue increase would result from converting economic waste into government revenue when employees voluntarily choose the *taxable* cash value of the *tax-exempt* parking subsidies they now receive.

In this calculation, the assumed market parking price of \$30 a month is above the market price of many commuter parking spaces, but those who now get the biggest parking subsidies would be the ones most tempted to take the cash alternative. Thus, the taxable cash alternative received by those who choose to cash out their parking subsidies should be significantly above the average parking subsidy for all workers. The assumption that 20 percent of those who now park free would choose the cash option is less than the average 37 percent reduction in auto trips to work found in the case studies comparing auto use between commuters who do and commuters who do not pay for parking at work (see Table 2). Finally, the assumed 20 percent combined federal and state income tax and social security tax rate is a conservative estimate of the marginal tax rate faced by those employees who would choose the taxable cash alternative to a parking subsidy. For all these reasons, the estimate of \$1.2 billion a year is a deliberately conservative estimate of the income tax revenue that would result from cashing out employer-paid parking subsidies.¹³

12. An unpublished but well-circulated study ("The Dimensions of Parking") done by Peat, Marwick for the United States Department of Transportation estimated that the total value of all employer-paid parking subsidies in the United States is \$52 billion per year, or approximately one percent of the \$5.5 trillion Gross National Product in 1990. By comparison, the estimate here of \$30 billion per year (still over one-half percent of GNP) is very low.

13. Although the chain of data and assumptions necessary to make this revenue estimate is long, Table 3 shows each step and allows the reader to examine the consequences of varying any assumption. The employers' taxable income and tax payments are unaffected if the new cash travel allowances are funded by replacing previous parking subsidies.

TABLE 4

HOW THE OPTION TO CASH OUT EMPLOYER-PAID PARKING SUBSIDIES
WILL INCREASE INCOME TAX REVENUES

1.	Nonagricultural Work Force	110,000,000
2.	Share of Workforce Commuting by Car	91.4%
3.	Number of Workers Commuting by Car	100,540,000
4.	Persons per Car for Work Trips	1.1
5.	Number of Cars Driven to Work	91,400,000
6.	Share of Cars Parked Free at Work	90%
7.	Number of Cars Parked Free at Work	82,260,000
8.	Assumed Average Cost of Parking (per Month)	\$30
9.	Total Annual Employer-Paid Parking Subsidy	\$29,613,600,000
10.	Share of Drivers Who Will Cash Out Parking Subsidies	20%
11.	Taxable Value of Cashed Out Parking Subsidies	\$5,922,720,000
12.	Assumed Marginal Income Tax Rate	20%
13.	INCREASE IN ANNUAL INCOME TAX REVENUE	\$1,184,544,000

Sources:

1. Economic Report of the President, 1991, p. 334.
2. 1990 Nationwide Personal Transportation Survey (Hu & Young, 1992, p. 20)
3. (3)=(1)x(2)
4. 1990 Nationwide Personal Transportation Survey (Hu & Young, 1992, p. 22)
5. (5)=(3)/(4)
6. See Section I.
7. (7)=(5)x(6)
8. Assumption. See text.
9. (9)=(7)x(8)
10. Assumption. See Table 1 and text.
11. (11)=(9)x(10)
12. Assumption. See Table 2 and text.
13. (13)=(11)x(12)

V. THE CONSEQUENCES OF CASHING OUT EMPLOYER-PAID PARKING

Before policy-makers would commit to the idea of requiring employers to offer the option of cash in lieu of parking subsidies, they would first want to know by how much it will reduce traffic congestion, air pollution, and energy consumption. Previous research, summarized in Table 2, has focussed on discovering how employer-paid parking increases solo driving, but has not gone on to measure the resulting increases in vehicle miles travelled, gasoline consumption, and total spending on transportation. To go beyond the simple measure of mode choice to these other more fundamental measures of transportation system performance, it is first necessary to have data not only on how employer-paid parking influences the mode choice of each commuter, but also on the distance travelled to work by each commuter. Fortunately, these additional data are available in a transportation survey of commuters to downtown Los Angeles, which collected data from 5,060 employees working for 118 employers; the statistical sample was designed to represent accurately the entire population of office workers in downtown Los Angeles.¹⁴

Because the survey included data on both employers' parking subsidies and their employees' travel behavior and socioeconomic characteristics, these data can be used to estimate how employer-paid parking alters employees' travel choices. Because the survey provided information on the parking subsidy policy of each employee's employer, the data permit an accurate estimate of the price for parking faced by each employee, including the parking price that transit riders would have paid if they had driven to work. Few if any other statistical models of mode choice have been estimated with accurate information on parking prices that employees actually pay when they drive to work. Market parking prices are typically used to represent what commuters pay for parking when mode choice models are estimated; because of the prevalence of employer-paid parking subsidies, however, market prices clearly misrepresent the prices that commuters actually pay for parking, or would have to pay for parking if they drove to work.

Willson (1991) used the employers' responses regarding their parking policy to select two subsamples of employees: the first is all those commuters whose employers do not subsidize any employee parking, and the second is all those commuters whose employers offer free parking to all employees. Willson then used these subsamples to estimate a logit model of commuter mode choice, with employer-paid parking included as an independent variable along with the other more customary variables such as income, occupation, and travel time and travel cost to work by each mode. I have used Willson's model to predict how cashing out employer-paid parking will change commuters' travel choices.¹⁵

14. The *Los Angeles CBD Employee-Employer Baseline Travel Survey*, was undertaken by the Community Redevelopment Agency of the City of Los Angeles in 1986. See Willson and Shoup (1990b) for a full description of the survey.

15. See Willson (1991) and Shoup and Willson (1992) for more detail on the estimation of this logit model. The model was initially estimated with data on both those who pay to park and those who park free. The model was then used to predict how varying the price of parking would affect the mode

1. Predicting the Consequences of Cashing Out Parking Subsidies

Because cash in lieu of a parking subsidy would be taxable, commuters would forgo the *after-tax* cash value of their parking subsidy if they chose to continue receiving the parking subsidy. Although commuters could continue to park free at work, they would thus "pay" the after-tax value of their parking subsidy for the "free" parking. Therefore, to estimate commuters' responses to the cash option, it is necessary to estimate how those now offered free parking would respond to a rise in the price of parking to a level equal to the after-tax cash value of the tax-exempt parking subsidy each commuter is offered.

Each commuter in the sample reported his or her annual income, so we can use this reported income to calculate the marginal income tax rate (federal, state, and social security combined) that each commuter would have to pay on any taxable cash received in lieu of a parking subsidy. We assume that commuters react to an opportunity cost of \$1 in the same manner as to an out-of-pocket cost of \$1; that is, if a commuter foregoes the commute allowance in favor of free parking, that commuter has in effect "spent" the commute allowance on parking. Since the after-tax value of each commuter's parking subsidy is the "price" that commuter would "pay" for "free" parking, the after-tax value of each commuter's current parking subsidy (taking into account each commuter's marginal income tax rate) was used as the price of parking for that commuter to predict each commuter's probability of choosing each mode.¹⁶

Figure 3 shows the predicted commuter mode split resulting from parking prices varying between 0 and \$5 a day, and it shows that the cash option reduces VMT by shifting commuters from solo driving to mass transit and carpools. Because there is very good transit access to downtown Los Angeles, many commuters choose mass transit if they must pay for their own parking at work, and the higher the parking price the greater the transit share. There is also an increase in carpooling when parking prices rise. It is this mode split information that has been used to predict commuters' reaction to the option of cash in lieu of employer-paid parking, with the after-tax value of the cash option used to represent the effective price of parking that each commuter would face if the cash option were made available.

Table 5 summarizes how offering employees the option to cash out their employer-paid parking would affect travel outcomes. The share of commuters who drive to work alone falls from 69 to 55 percent, and the number of vehicle miles travelled to work falls by 3.9 VMT per

choices of all commuters in the subsample who park free. Thus, it predicts how those who are now offered employer-paid parking would have behaved if they had not been offered employer-paid parking.

16. See Shoup and Willson (1992) for the schedule of marginal income tax rates applied to commuters' incomes, and Willson (1991) for a description of the mode choice model.

TABLE 5

TRAVEL BEHAVIOR AND TRAVEL EXPENDITURES OF COMMUTERS
TO THE LOS ANGELES CENTRAL BUSINESS DISTRICT

<u>Travel Behavior or Travel Expenditure</u>	<u>Driver Pays for Parking</u>	<u>Employer Pays for Parking</u>		<u>Effect of Cash Option</u>
		<u>With Cash Option</u>	<u>Without Cash Option</u>	
1. Solo Driver Share	48%	55%	69%	-14%
2. Vehicle Trips to Work & Parking Spaces Occupied (per Employee)	0.56	0.62	0.75	-0.13
3. Parking Expenditure (per Employee per Year)	\$563	\$626	\$750	(\$124)
4. Vehicle Miles Travelled (per Employee per Day)	18.1	20.2	24.1	-3.9
5. Vehicle Miles Travelled (per Employee per Year)	3,919	4,383	5,230	-847
6. Gasoline Consumed (Gallons per Employee per Year)	231	258	308	-50
7. Auto Use Expenditure (per Employee per Year)	\$1,137	\$1,271	\$1,517	(\$246)
8. Parking + Auto Use Expenditure (per Employee per Year)	\$1,700	\$1,897	\$2,266	(\$369)

Assumptions:

Days Worked per Year	217
Auto Fuel Efficiency (MPG)	17
Auto Use Cost (\$/Mile)	\$0.29
Cost of Parking (\$/Month)	\$83.82

employee per day, or by 17 percent.¹⁷ Gasoline consumption falls by 50 gallons per employee per year, and total expenditure on parking and automobile use fall by \$369 per employee per year.

The data in Table 5 refer to how cashing out would reduce the *per-employee* costs caused by employer-paid parking. To estimate how cashing out would reduce the *total* costs caused by employer-paid parking we must multiply these per-employee effects by the 69,503 employees who are offered free parking in downtown Los Angeles. Table 6 summarizes and compares the *total* costs of commuting to downtown Los Angeles under the same three scenarios (driver-paid parking, employer-paid parking with the cash option, and employer-paid parking without the cash option).

By shifting commuters from solo driving to ridesharing, offering commuters the *option* to cash out their employer-paid parking would eliminate 9,000 vehicle round trips per day to the Los Angeles CBD. That is, the 69,503 employees who are offered conventional employer-paid parking commute to work in 52,100 automobiles. If offered the option to take their parking subsidies in taxable cash, they would travel to work in 43,100 automobiles. Ending employer-paid parking altogether would further reduce the number of automobiles to 38,900 but would, of course, also encounter fierce resistance from all those employees who would lose their subsidies. By contrast, employees should welcome the new option to cash out their parking subsidies.

The significance of the 9,000 automobile commute trips that would be reduced by cashing out parking subsidies can also be expressed in terms of reduced VMT and reduced gasoline consumption. Table 6 shows that cashing out parking subsidies would reduce automobile commuting travel to the CBD by 285,000 VMT a day, or about 60 million VMT a year, and would save 17,000 gallons of gasoline consumed for automobile commuting a day, or about 3.5 million gallons of gasoline a year. This reduction in VMT would also reduce the external costs these commuters create. The last two rows of Table 6 show that offering these employees the cash option would reduce the total social cost of automobile commuting to downtown Los Angeles by \$192,000 a day, or about \$40 million a year.

To summarize, for commuters to the Los Angeles CBD, we have estimated that offering employees the option to cash out their current employer-paid parking subsidies would:

- ⊙ reduce the number of solo drivers to work by 20 percent.
- ⊙ reduce the number of vehicle trips to work by 9,000 a day.
- ⊙ reduce the number of parking spaces demanded by 9,000.
- ⊙ reduce vehicle miles travelled to work by 285,000 VMT a day.

17. Note that allowing employees the option to cash out their parking subsidies would reduce average VMT by approximately two-thirds as much as would the politically unpopular although analytically superior policy of charging everyone the full market price for parking at work.

TABLE 6

HOW CASHING OUT EMPLOYER-PAID PARKING WOULD AFFECT TRAVEL
OF FREE PARKERS IN THE LOS ANGELES CBD

Travel Behavior or Travel Expenditure (Total per Day)	Driver Pays for Parking	Employer Pays for Parking		Effect of Cash Option
		<i>With</i> Cash Option	<i>Without</i> Cash Option	
1. Vehicle Trips to Work & Parking Spaces Occupied	38,900	43,100	52,100	(9,000)
2. Vehicle Miles Travelled	1,258,000	1,390,000	1,675,000	(285,000)
3. Gasoline Consumed	74,000	81,765	98,529	(16,765)
4. Congestion Cost Imposed	\$252,000	\$278,000	\$335,000	(\$57,000)
5. Pollution Cost Imposed	\$50,000	\$56,000	\$67,000	(\$11,000)
6. External Cost Imposed (Congestion + Pollution)	\$302,000	\$334,000	\$402,000	(\$68,000)
7. Parking Expenditure	\$180,000	\$200,000	\$241,000	(\$41,000)
8. Auto Use Expenditure	\$365,000	\$403,000	\$486,000	(\$83,000)
9. Private Cost of Auto Use (Driving + Parking)	\$545,000	\$603,000	\$727,000	(\$124,000)
10. Total Social Cost of Auto Use (Private + External)	\$847,000	\$937,000	\$1,129,000	(\$192,000)
11. Relative Cost	75%	83%	100%	-17%

Assumptions:

Days Worked per Year	217
Auto Fuel Efficiency (MPG)	17
Auto Use Cost (\$/Mile)	\$0.29
Cost of Parking (\$/Month)	\$83.82
Congestion Cost (\$/Mile)	\$0.20
Pollution Cost (\$/Mile)	\$0.04
Number Offered Free Parking	69,503

- ⊙ reduce gasoline consumption for automobile commuting by 3.5 million gallons a year.
- ⊙ reduce the total cost of automobile commuting to downtown Los Angeles by \$40 million a year, or by 17 percent.

2. Speculation on the National Consequences of Cashing Employer-Paid Parking

The total number of people employed in downtown Los Angeles accounts for only three percent of total employment in Southern California. Therefore, offering *all* employees in Southern California the option to cash out their employer-paid parking subsidies would produce benefits that are far greater than these estimates for downtown Los Angeles alone. And although it is risky to extrapolate from one city to the rest of the country, it is at least instructive to explore the implications of what has been found in Los Angeles.

The estimates shown in Table 5 are that offering employees in downtown Los Angeles the *option* to cash out their parking subsidies would reduce average automobile travel per commuter by 3.9 VMT a day, or by 847 VMT a year, and would reduce average gasoline consumption by 50 gallons per commuter per year. As estimated earlier, approximately 90 million commuters are offered some form of employer-paid parking. If all these commuters respond to the cash option as has been estimated for commuters in Los Angeles, offering all employees in the United States the *option* to cash out their parking subsidies could lead to a 76 billion VMT a year reduction in automobile travel for commuting, and save 4.5 billion gallons of gasoline a year consumed for automobile commuting. This 76 billion VMT a year reduction in automobile travel is equivalent to 3.5 percent of the total 2.1 trillion VMT traveled by motor vehicles in the United States in 1991. The 4.5 billion gallons of gasoline saved is equivalent to 3.5 percent of the total 130 billion gallons of gasoline and diesel fuel consumed by motor vehicles in the United States in 1991 (MVMA, 1992).¹⁸

If cashing out parking subsidies reduces 76 billion VMT and 4.5 billion gallons of gasoline consumption a year, the benefits would extend well beyond the transportation and energy sectors. If, as argued earlier, the external cost of automobile pollution emissions is 4 cents per VMT, reducing automobile travel by 76 billion VMT a year could reduce pollution damage by \$3 billion a year. And given the likelihood that the commuter's car and its fuel are both imported, cashing out employer-paid parking could improve the nation's trade balance.

Combustion of each gallon of gasoline produces 19.7 pounds of carbon dioxide, so cashing out employer-paid parking subsidies could, by conserving 4.5 billion gallons of gasoline a year, eliminate 40 million metric tons of CO₂ emissions a year. This would make a significant contribution toward the United States' efforts to reduce the risk of global warming. By comparison, research done for the Environmental Protection Agency estimated that all the

18. It is important to note, however, that the full benefits of cashing out parking subsidies would not materialize unless minimum parking requirements in municipal zoning ordinances are adjusted to the reduced demand for parking.

transportation investments funded by the Intermodal Surface Transportation Act of 1991 will eliminate 39 million metric tons of CO₂ emissions per year (in the year 2000).¹⁹

Obviously, generalizing results from one city to the nation must be viewed with some caution, but there are reasons to believe cashing out employer-paid parking subsidies could be at least as effective in reducing solo driving elsewhere as has been found in Los Angeles. Table 1 showed that free parking is no more common in Southern California than in the rest of the country. Further, the clichés that "Californians love their cars" and "Los Angeles doesn't have a good mass transit system" suggest that it is *more* difficult to get motorists out of their cars in Los Angeles than it would be elsewhere, so cashing out employer-paid parking might produce even greater benefits in the rest of the nation. Therefore, the annual reduction of 76 billion VMT and saving of 4.5 billion gallons of gasoline may underestimate, rather than overestimate, the national benefit of the option to cash out employer-paid parking. In any case, the methods used to estimate the results of cashing out parking subsidies in Los Angeles have been clearly spelled out, so a reader can judge the methods and if necessary modify the estimates for the rest of the country. To achieve national benefits of even one-tenth of these estimates would be a major feat, however, so a marginally more precise estimate should not alter anyone's evaluation of whether offering employees the option to cash out employer-paid parking is a good idea.

Although voluntary conservation of 4.5 billion gallons of gasoline a year would be a tremendous achievement, it would also reduce federal and state gasoline tax revenues. At the federal gasoline tax rate of 14 cents a gallon, the federal revenue loss would be \$620 million a year. At the median state gasoline tax rate of 16 cents a gallon, the state revenue loss would be another \$720 million a year. Therefore, total gasoline tax revenues would decline by \$1.35 billion a year. This estimated gasoline tax revenue loss is roughly equal in size to the estimated income tax revenue gain of \$1.2 billion a year caused by cashing out parking subsidies (see Table 4). Such a large reduction in gasoline tax revenue would be a major concern *if the gasoline tax were not a user fee*. But because the gasoline tax pays for road use costs, the gasoline tax revenue loss must be considered along with the 76 billion VMT decrease in road use. *Cashing out employer-paid parking reduces tax revenue only because it reduces road use, so the net fiscal effect on highway finance should not be adverse*. Further, there are many reasons to believe that the gasoline tax seriously underprices road use, especially at peak hours when cashing out would reduce VMT the most.²⁰ Indeed, if the gas tax *did* pay the full cost of road use, there would never be any problem in financing new roads or repairing old ones. *Therefore, the net positive fiscal impact of reduced peak-hour VMT and reduced gasoline tax revenue should be a significant additional benefit of cashing out employer-paid parking*.

19. The 39 million ton reduction in CO₂ emissions is the "optimistic" estimate. The "conservative" estimate is 16.6 million tons (Apogee Research, 1991, p. 1).

20. MacKenzie, Dower, and Chen (1992) estimate that gasoline taxes and user fees cover only about 60 percent of public spending on roads.

This argument about the net fiscal impact of cashing out parking subsidies can be clarified by comparing it to the very different net fiscal impact of increasing automobile fuel efficiency standards. Increased fuel efficiency reduces gasoline tax revenue *without* reducing VMT. Indeed, increased fuel efficiency makes driving cheaper, and so would increase VMT. Thus, increased fuel efficiency standards not only reduce gasoline tax revenue but also increase the demand for highway expenditure. By contrast, cashing out employer-paid parking reduces gasoline tax revenue only because it reduces the demand for highway expenditure. For this reason, it would be a serious error to object to cashing out parking subsidies on the grounds that the resulting gasoline conservation would imperil highway finance. Rather, by reducing the demand for peak-hour highway capacity, cashing out employer-paid parking could significantly *improve* highway finance.

Another fiscal perspective is gained by comparing cashing out parking subsidies to charging congestion tolls for road use at peak hours. Charging congestion tolls and cashing out parking subsidies are complementary, and in some ways similar, policies. But there is an important difference. The failure to charge motorists for the congestion they create is a sin of omission--a failure to intervene to raise the price of driving to match its full social cost. In contrast, employer-paid parking is a sin of commission--an intervention that reduces the price of parking below its fair market rate, let alone its full social cost. Ceasing an existing intervention that reduces price below social cost (*i.e.*, cashing out employer-paid parking) is as much of a reform as is introducing a new intervention designed to raise price to equal social cost (*i.e.*, charging congestion tolls). As a matter of priority, is it sensible to introduce new and technically complex congestion tolls to raise the price of automobile trips without first cashing out existing employer-paid parking subsidies that reduce the price of those same automobile trips?

3. Speculation on the General Equilibrium Consequences of Cashing Out Employer-Paid Parking

The predictions in Tables 6 and 7 are based on comparing the observed differences in commuting behavior between *individual* employees who themselves differ only in that some park free at work while others pay for parking. But if the law is changed so that *all* employees are offered the option to cash out their employer-paid parking subsidies, all employees will suddenly "pay" for their parking, at least in the sense of foregoing cash or a rideshare subsidy if they take a "free" parking space. The aggregate behavioral changes that will occur when *everyone* begins to pay for parking may well differ from the results predicted from behavioral changes observed when *individuals* begin to pay for parking. For example, if many employees decide to cash out their parking subsidies, what will happen to all the vacant parking spaces deserted by those who quit driving? How can so many more commuters cram onto already overcrowded mass transit? And won't driving become much faster and pleasanter with fewer cars on the road? In other words, is there a fallacy of composition in predicting the consequences of cashing out *all* employer-paid parking by observing the behavior of *individuals* who pay for parking?

Although it is not possible to answer all these questions regarding the general equilibrium results of cashing out all parking subsidies, it is possible to speculate on some of the more likely consequences. Cashing out parking subsidies will decrease the demand for parking among those who now park free, but their cutback on parking space use will increase the supply of parking for everyone else. Therefore, cashing out employer-paid parking may not immediately reduce the number of parked cars, but it will reshuffle cars and commuters in some surprising ways.

First, the option to cash out employer-paid parking will induce some free parkers to carpool, especially because so many current free parkers will simultaneously be offered a cash incentive to seek out a carpool partner. It is easier to find a carpool partner when everyone else is also seeking a carpool partner, so carpooling should benefit from economies of scale as a result of cashing out parking subsidies. Thus, more commuters should shift to carpools than would be predicted from either case studies or mode split models that do not take this benefit of economies of scale for carpooling into account.

Second, with a parking supply that is fixed in the short run, a reduction in parking demand will reduce the market price of parking, and this price reduction will attract other cars to fill the spaces emptied by commuters who cash out their parking subsidies. Parking spaces vacated by peak hour commuters will become available to off-peak visitors, including shoppers, business clients, and tourists, who will find downtown relatively cheaper and easier to visit. Because most work trips occur during peak hours, while other trips are spread more evenly through the day, cashing out employer-paid parking should reduce peak-hour congestion en route to and from work.

Third, if the shift to carpools increases the average number of occupants per car by more than it reduces the number of cars driven to work, cashing out can increase rather than decrease the number of commuters who travel to work by car. That is, more *people* will commute to work in fewer but higher occupancy *cars*; this phenomenon has been observed in case studies after employers began to charge for parking, because some former solo drivers formed carpools not only with other former solo drivers but also with former bus riders.²¹ Peak-hour transit ridership could fall as a consequence. The marginal cost of peak-hour commuter transit service far exceeds its farebox revenue, however, so reducing peak-hour demand for mass transit and leveling out transit demand throughout the day should reduce transit deficits and improve transit service.

Fourth, cashing out might redistribute parking spaces in other ways. For example, when the Canadian government began charging its employees for parking in Ottawa, more women began to drive to work; this result occurred because women were more willing to pay for the parking spaces that were vacated by men who had taken a space when it was allocated free on

21. For example, see Surber, Shoup, and Wachs (1984). In their evaluation of commuters' responses to Regulation XV, Wachs and Giuliano (1992b) found that the average solo driver share fell by six percent and the carpool share rose by 33 percent, but the bus share did not change at all.

the basis of seniority, but who were not willing to pay the market price for it. Two commuters began ice-skating to work.

All these effects would occur in the short run, when the supply of parking spaces is fixed. There are more substantial benefits resulting from cashing out parking subsidies, such as reductions in off-street parking requirements and improvements in urban form, that would occur only in the long run, when the supply of parking spaces can be reduced in response to the reduced demand for parking.

VI. A FIRST STEP: CALIFORNIA'S CASH-OUT LEGISLATION

The Federal Internal Revenue Code creates a strong incentive for employers to pay for their employees' parking, and thus a strong incentive for commuters to drive to work alone. States and localities then face the enormous problem of devising policies to deal with the resulting traffic congestion and air pollution. The State of California has recently enacted legislation that directly addresses the problems caused by employer-paid parking, and that serves as a model of how the Federal government could address the same problems.

1. The California Cash-Out Requirement

Briefly, the new California cash-out legislation requires that, in any air basin designated by the State Air Resources Board as a "nonattainment" area, employers of 50 or more persons who provide a parking subsidy to employees must offer a "parking cash-out program."²² As defined in the law, a parking cash-out program means

an employer-funded program under which an employer offers to provide a cash allowance to an employee equivalent to the parking subsidy that the employer would otherwise pay to provide the employee with a parking space. "Parking subsidy" means the difference between the out-of-pocket amount paid by an employer on a regular basis in order to secure the availability of an employee parking space not owned by the employer and the price, if any, charged to an employee for the use of that space.

The employer must offer an employee the option to take a cash allowance in lieu of a parking subsidy *only* if the employer makes an explicit cash payment to a third party to subsidize the employee's parking. Therefore, the employer clearly saves the cash paid for the parking subsidy if the employee takes the cash allowance. The employer's avoided parking subsidy directly funds, dollar for dollar, the employee's cash allowance, so there is *no net cost increase* for the employer when an employee foregoes the parking and takes the cash. The employer must offer the cash allowance *only* to each employee who is offered a parking subsidy, not to all other employees. And each employee's cash allowance is equal to the parking subsidy offered to *that* employee, so if some employees are offered smaller parking subsidies than other employees, their required cash allowance would also be smaller. Thus, the law is written as tightly as possible to avoid increasing the employer's cost of subsidizing employees' commuting.

As discussed earlier in Section V, the cash option could increase costs for employers who (1) offer parking subsidies to solo drivers, (2) do not offer an equivalent subsidy to ridesharers, and (3) nevertheless have a significant number of employees who turn down the offer of a parking subsidy and rideshare to work instead. In this case, the added cost of offering cash to

22. A "nonattainment" area is one that does not meet the state's ambient air quality standard. Because all major metropolitan areas in California are nonattainment areas, the cash-out requirement applies to almost all employers of 50 or more persons in the state.

current ridesharers who are offered but have turned down a parking subsidy must be considered the inevitable and wholly justified cost of moving to a commute subsidy policy that removes inequities among employees. Arguing against the required cash option on the grounds that the employer must pay current ridesharers as much as solo drivers is the same as arguing that employers should *continue* to offer smaller subsidies to ridesharers than to otherwise identical solo drivers. What employer would be shameless enough to make this argument? Anyway, the case study in the previous section proved that a firm can offer all its employees the option to cash out their parking subsidies at no increase in the firm's total cost of subsidizing employee travel.

It is understandable that legislators would be cautious about imposing any unnecessary cost on employers in the first test of a cash-out requirement. As enacted, the law applies only in the clearest "win-win" situations where employees will benefit, where there is no obvious additional cost to the employer, and where there are clear environmental benefits of reduced traffic congestion and air pollution. It seems entirely reasonable to require that an employer who offers to pay for an employee's parking *if the employee drives to work* must also offer to pay the same amount *if the employee rideshares to work*.

As proposed in the initial draft legislation, a parking subsidy was defined as the difference between (1) the market price of parking and (2) the price charged to the employee for parking, including cases where the parking was owned by the employer or was provided "free" to the employer as part of the lease for office space. As a result of legislative negotiations, the cash-out requirement was subsequently restricted to situations where the employer makes a separate, out-of-pocket cash payment to a third party to subsidize the employee's parking. Further, in cases where an employer makes cash payments for parking under an existing (as of January 1, 1993) lease for the parking, the cash-out requirement does not apply until the lease expires or unless the lease permits the employer to reduce, without penalty, the number of parking spaces leased. Thus employers can continue to provide below-market parking to employees without having to offer the cash equivalent if they (1) own their own parking, or (2) receive it bundled in an office space lease without separate payment, or (3) have pre-existing long-term parking leases committing them to pay for the parking spaces. In creating these exceptions, the Legislature made clear that it intended the cash-out requirement to apply only to employers who can reduce their payments for employee parking and use the cash saved thereby to fund the alternative cash allowance.

It seems only common sense to require that an employer should subsidize a ridesharer as much as a solo driver. This is all that the new California legislation requires. And as a first step it seems sensible to proceed cautiously, as the California legislature chose to do when it limited the cash-out requirement to cases where the employer pays out-of-pocket cash to a third party to subsidize an employee's parking. But if the results of the first step prove successful, the way to obtain the full benefits of a market pricing policy for parking would be eventually to extend the cash-out requirement to all employer-paid parking subsidies.

If employers are given sufficient advance notice to plan for the market pricing of parking, and if they are able to learn from the experience of those who are the first to cash out employer-paid parking subsidies, it does not seem a necessary feature of the California legislation to permanently exempt employers who own their own parking but who could put that parking on the market if their employees do not use it. Where employers who own parking spaces can put them on the market, the employer could earn the market parking price if an employee does not take a "free" parking space. Therefore, it is a logical next step to say that where an employer could earn money if an employee does not take a "free" parking space that the employer owns but could lease to someone else, then the employer should offer the employee the money that the employee thereby enables the employer to earn. (If parking is so abundant at the work-site that there is no market for parking, then the employer would not have to offer any cash in lieu of the owned parking.)

The legislation also exempts employers from the cash-out requirement if they receive parking "bundled" with office space, at no extra charge for the parking. But parking space leases can be "unbundled" from office space leases, so that there are separate charges for parking and for office space.²³ Office space rents are lower when parking is separately charged for rather than provided "free" with the office space. Thus, in the long run, it would make sense to eliminate the cash-out exemption for bundled parking and to work toward a situation where there is both a parking market and an office space market, without any conventional assumption that parking spaces and office space must come in fixed proportions at a single, all-inclusive price.

Finally, employers of fewer than 50 employees are exempt from the cash-out requirement, but this does not seem to be a necessary feature of the legislation. Why should *any* employee be denied the option to cash out a parking subsidy and begin ridesharing? Although it makes sense to exempt a variety of parking subsidies from the first trial of the parking cash-out requirement, moving to a genuine market policy for all commuter parking will, in the long run, serve both the employers' and the employees' interests, and will further reduce traffic, save fuel, and improve the environment.

2. How the California Cash-Out Legislation Was Adopted

The Symposium's organizers have asked me to describe how "cashing out" became part of California's legislative agenda, and how it came to be adopted.

23.. Commuter Transportation Services conducted a survey regarding parking leasing practices of employers in high-density office centers in Southern California. The purpose of the survey was to assess how many employers would be affected by California's cash-out legislation. Fifty-eight percent of employers reported having separate, unbundled leases for parking in order to provide parking for their employees. Seventy-one percent of employers in downtown Los Angeles reported having separate leases for parking.

The first factor leading to passage of the California legislation was the research showing how strongly employer-paid parking stimulated solo driving. Much of this research was supported by the Federal Transit Administration and the University of California Transportation Center. It was possible to estimate the effects of employer-paid parking by conducting case studies, either of "quasi-experiments" where employers de-subsidized parking, or of side-by-side comparisons where there were some employers who did subsidize parking and otherwise similar employers who did not. The gradual accumulation of the evidence, summarized in Table 2, began to convince more and more people that employer-parking was an important issue. If there is a lesson here in regard to congestion pricing, the implication is that evidence from congestion pricing demonstration projects (if they turn out well) will certainly help to persuade non-believers that congestion pricing is indeed an important issue.

A second factor was the productive relationship between the University of California faculty and the state government in Sacramento. In particular, a series of annual conferences at Lake Arrowhead, organized by Martin Wachs and LeRoy Graymer through UCLA Extension's Public Policy Program, gathered together university researchers, legislators, and state officials to focus on the linked problems of transportation, land use, and air quality. The idea of cashing out parking subsidies was presented several times at these conferences, along with the accumulating evidence in favor of it. The cash-out bill that eventually passed (Assembly Bill 2109) was introduced into the Assembly by Assemblyman Richard Katz, Chairman of the Assembly Transportation Committee, whose chief transportation aide, John Stevens, was on one of the panels where the cash-out proposal was debated.

A third factor leading to passage of the California legislation was the gradual refining of the idea from "charging for parking" toward "cashing out parking subsidies." In particular, there was the precedent of the City of Los Angeles Transit Subsidy Ordinance in 1989. This ordinance requires employers who subsidize parking for *any* employee to offer a \$15 a month transit subsidy to *all* employees. It struck me that if a city can require employers to offer a transit subsidy in lieu of a parking subsidy, why can't a city require employers to offer cash in lieu of a parking subsidy? The Federal tax exemption causes the employer-paid parking problem, but cities or states don't have to wait for the Federal government to change the tax code before requiring the cash option.

The legislation faced an unfortunate setback that is quite instructive for academics intent on influencing policy. In my writing I had focussed on the tax-exemption for employer-paid parking as the key problem. I assumed that readers understood that the tax-exemption is for *employees*, not for employers. Employers can deduct the cost of providing parking as a cost of doing business when calculating net business income, but employees do not pay a tax on the receipt of the parking. Those drafting the legislation assumed, however, that the problem was the employer's tax deduction, not the employee's tax exemption. The reform proposed in the first draft of AB 2109 was to eliminate the *employer's* deduction for providing parking when calculating net business income for purposes of the state income tax. When this first draft of the legislation was circulated, it naturally drew a storm of protest from employers who pointed out its many flaws. First, it is a tax increase for employers. Second, many employers would

not be able to separate out their expenses incurred to provide employee parking, especially if the employer already owns its parking spaces, or if the parking is provided without separate charge in a lease for office space. Third, it does not apply to public or non-profit employers who do not pay income taxes.

A further problem with the draft legislation was that it exempted from the employee's state taxable income any cash payments received in lieu of a parking subsidy. If an employer offered *only* a cash travel allowance, and no parking subsidy, the cash travel allowance would presumably be taxable because it is not offered in lieu of a parking subsidy. But if the employer offered a parking subsidy *or* cash (so the cash in lieu of a parking subsidy would be tax-exempt for the employee), and the employee took the parking, the employer could not deduct the cost of the parking as a business expense.

I was dismayed to see how what I thought was such a simple proposal could have been so misinterpreted. The lesson for academics is that you shouldn't assume that legislators understand what you are proposing. I wrote to Assemblyman Katz to propose a rewording of the legislation to focus on the tax consequences for the employee, not the employer. Erik Lange, a lawyer and legislative aide to Assemblyman Katz, rewrote the bill extensively, and added an inventive twist in response to employers' testimony at legislative hearings. Employers complained that it was unreasonable for *local* governments to require developers to provide parking for employees, and the *state* government to require employers to offer employees cash for not using that parking. In response, the cash-out requirement was scaled back to apply only to employers who make regular cash payments to a third party to secure employee parking, so that whenever an employee takes cash, the employer clearly saves an equivalent amount on paying for parking. Also, the legislation requires local governments to reduce parking requirements when a developer implements a cash-out program.

With these amendments, AB 2109 easily passed in both the Assembly and Senate Transportation Committees, and passed in the Senate with a large bipartisan majority. In the Assembly it passed on a strict partisan vote; the only Republican who voted in favor of it is well known for his strong advocacy of splitting California into two separate states, North and South, so perhaps he hoped this bill would further that purpose. The almost unanimous Republican opposition puzzled me, because I had assumed that cashing out parking subsidies would be seen as a quintessentially market-oriented policy. I have since asked several Republican legislators why they voted against the bill, and their explanation is that the vote was late in the year and no one had time to study the bill. After I explained the bill to them, they said they liked it.

Finally, Republican Governor Pete Wilson signed the legislation in Fall, 1992. I am told that his aides in the Office of Policy Research were initially concerned that the bill intruded into collective bargaining and employers' decisions regarding employee compensation, but the bill was supported by the appropriate advisors in the administration (from the Department of Transportation and the Air Resources Board), many of whom had attended the conferences at Lake Arrowhead where the cash-out proposal had been discussed. Also, when employers and

their lobbyists who had initially testified against earlier drafts of the bill were telephoned, all reported that the bill had been sufficiently amended to meet their objections.

3. **Why the California Cash-Out Legislation Was Adopted**

In addition to the preceding political story, I have also been asked by the Symposium organizers to speculate on why cashing out parking subsidies became the law in California while congestion pricing, a much older idea, has had little political success. I can think of four aspects of cashing out parking subsidies that suggest possible criteria for choosing politically successful congestion pricing demonstration projects.

A. Incremental Nature of the Policy Change

Change, to be accepted, must usually be incremental. Problem-solving often means finding the next steps that can practically be taken toward ultimate goals. Cashing out parking subsidies, especially in the form that was legislated in California, requires very little change in the way most employers conduct their business. The required cash option is minimally intrusive on the both the employers' and the employees' decisions, because employers can continue to subsidize parking, so long as they offer employees the option to choose cash instead. The political bargaining that led to the passage of California's cash-out legislation resulted in exempting employers who own their own parking, or who have a long term lease that does not allow them to reduce the number of spaces they rent. Thus, implementation will begin first with the clearest "win-win" case where the employer pays out-of-pocket cash to a third party to subsidize employee parking. In this case the employer's avoided parking subsidy directly funds, dollar for dollar, the employee's cash allowance, so there is no net cost increase for the employer when an employee foregoes the parking and takes the cash. Later, after employers have been given sufficient advance notice to adjust to the emergence of a market where parking spaces are allocated by prices rather than by subsidies, another incremental step would be to extend the cash-out requirement to all employer-provided parking.

In regard to congestion pricing, one suggestion for a similarly incremental demonstration project would be to modify an existing flat toll on a congested bridge or tunnel rather than to introduce a new toll for a previously free facility.

B. Minimal Income Redistribution

One notable aspect of cashing out parking employer-paid parking is that it does not significantly redistribute any income. With minor exceptions, those who now receive a parking subsidy continue to receive a subsidy, and those who do not receive a subsidy continue to not receive a subsidy. Although the external benefits such as cleaner air and reduced congestion accrue to everyone, the private benefits of cashing out parking subsidies accrue to those who are already subsidized. In this sense, cashing out employer-paid parking appeals to the concept of equity defined as "everyone gets what they are accustomed to getting." If existing parking subsidies are unfairly distributed, cashing out would not require any change in this unfair

distribution, although putting an explicit cash value on this unfairness might eventually lead to a redistribution of subsidies (such as an equal travel allowance for all employees) that is fairer when judged by the usual standards.

In regard to congestion pricing, a similarly non-redistributional demonstration project might be a revenue-neutral toll change on an existing facility. Any revenue gained from raising the toll at congested hours could be used to reduce the toll at off-peak hours. Any increase in tolls for solo drivers could be used to reduce tolls for higher-occupancy vehicles. In general, the toll revenue should be redistributed to compensate those who will pay them, as proposed by Small (1992).

C. A High Benefit/Cost Ratio

Another notable advantage of cashing out employer-paid parking is that it promises large benefits in relation to the cost. In cost/benefit analysis, there is a tradition of measuring only efficiency costs and benefits, and of neglecting transfer costs and benefits. But for a political analysis, transfer costs and benefits seem as important as efficiency costs and benefits. Both the transfer and the efficiency costs of cashing out employer-paid parking are very low. The transfer benefits are also quite low, and consist only of the cash payments that would accrue to those who are now offered a parking subsidy but have not taken it. What is left is a large efficiency benefit consisting of (1) increased welfare for employees who cash out their parking subsidies at no cost to their employers, (2) increased income tax revenue, and (2) the social benefits of reduced congestion, energy consumption, and air pollution.

In regard to congestion pricing, the implication is that proposals for demonstration projects should be judged on the basis not only of their expected efficiency benefits and costs, but also their expected transfer benefits and costs. A high ratio of efficiency benefits to transfer costs would be a desirable feature, even if pure transfer costs (which are offset by transfer benefits) are disregarded in a conventional benefit/cost ratio. The most promising places to undertake demonstration projects might be in those locations where the inefficiency caused by the lack of congestion pricing is greatest, and where the congestion tolls would redistribute income the least.

D. Finding the Right Name

Another possible contributing factor in the legislative success of cashing out employer-paid parking was finding a more politically acceptable term than "paying for parking." Although the evidence clearly shows that employer-paid parking converts potential carpoolers and transit riders into confirmed solo drivers, no one will become popular by recommending that commuters should pay for their parking. I know this from personal experience. The situation changed, however, when I began to recommend "cashing out parking subsidies." At one California Assembly hearing where I testified about the problems caused by employer-paid parking and recommended the cashing-out solution, I was followed by a burly union official who began by saying that he knew of cases where a whole factory would go out on strike if an

employer so much as removed a Coke machine from the shop floor. He told the Assembly Members that free parking for employees was a non-negotiable right. I sat there fearing what he would say next, and especially what he would say about me. I was very relieved, however, when he then said "But I liked what the Professor just said."

He liked the idea that employees would continue to get free parking, and he liked the idea that they could cash it out. The option to take cash in lieu of free parking means, of course, that a commuter who takes the "free" parking in effect pays for it by foregoing the cash. But this didn't bother the union official. I don't know whether he responded favorably because the phrase "cashing-out" is more acceptable than "charging for parking," but I can assure you that when a union official is present it is much easier to recommend cashing out parking subsidies than it is to recommend charging for parking.

There are a number of other policies that the right name has helped to sell, and I suggest that advocates of congestion pricing should search for a better name to market the idea. I've listed below some examples of euphemisms that have softened the path for some difficult policies, but I can't think of an equivalent for congestion pricing. Perhaps as a start it should be made clear that the goal of pricing is to promote free flow of traffic, that it can be revenue neutral rather than a tax increase, and that there are discounts for off-peak use rather than surcharges for peak use.

REALITY

EUPHEMISM

Traffic barrier

Traffic calming

Pollution tax

Green fee

Restrain energy demand

Soft energy path

Gas tax

Pay-at-the-pump

Charging for parking

Cashing out parking subsidies

Congestion toll

??????????

VII. WHY THE CALIFORNIA CASH-OUT LEGISLATION WAS NECESSARY: PUTTING PEOPLE FIRST

California's cash-out legislation requires employers who subsidize employee parking to offer employees the *option* to take their parking subsidies in cash. Other states could enact similar legislation. But it should be obvious that the Internal Revenue Code's special tax exemption for employer-paid parking is the root cause of the employer-paid parking problem. Employers are not responsible for the employer-paid parking problem. Employers are simply carrying out the public policy embedded in the Internal Revenue Code. It is public policy that is flawed, not the employers' behavior. It should not be left for every state to enact complicated legislation, like California's, that is designed solely to counteract a small, serious, and easily remedied flaw in the Internal Revenue Code.

The case has been argued here for amending the Internal Revenue Code's definition of tax-exempt "qualified parking" to require that an employer who offers an employee a parking subsidy must also offer that employee the *option* to take, in lieu of the parking subsidy, the fair market value of the parking subsidy, either as a taxable cash commute allowance or as a mass transit or a ridesharing subsidy. Employers could continue with any existing parking subsidy arrangement, so long as they broaden the offer to include the *option* of using the cash value of the parking subsidy for mass transit, ridesharing, or any other purpose the employee prefers.

The political bargaining that led to the passage of California's cash-out legislation suggests that, at the Federal level, it may be appropriate to implement the cash-out requirement in stages, beginning first with the clearest "win-win" case where the employer pays out-of-pocket cash to a third party to subsidize employee parking. In this case the employer's avoided parking subsidy directly funds, dollar for dollar, the employee's cash allowance, so there is no net cost increase for the employer when an employee foregoes the parking and takes the cash. Later, after employers have been given sufficient advance notice to adjust to the emergence of a market where parking spaces are allocated by prices rather than by subsidies, the cash-out requirement could be extended to all employer-provided parking. To repeat, however, the proposal is not to prohibit, tax, or even discourage employer-paid parking. Rather, the proposal is simply that an employer who offers to pay for an employee's parking *if the employee drives to work* must also offer to pay the same amount *if the employee rideshares to work*.

Because cash is taxable and a parking subsidy is tax-exempt, offering employees the option to cash out parking subsidies will reduce solo driving to work by less than would ending parking subsidies altogether. The research on commuters in Los Angeles, however, suggests that the taxable nature of cash does not seriously diminish commuters' response to cash. Requiring employers to offer employees the *option* to cash out their parking subsidies will reduce traffic congestion, improve air quality, conserve gasoline, enhance employees' welfare without increasing employers' costs, and increase tax revenue without increasing tax rates. All these benefits will derive simply from subsidizing *people*, not *parking*.

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