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**Parking requirements as a barrier to housing development:  
regulation and reform in Los Angeles**

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Parking requirements as a barrier to housing development: regulation and reform in Los Angeles

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*Abstract:* Residential parking requirements are an obstacle to the redevelopment of older buildings that predate the automobile age. Because these buildings cannot easily be retrofitted to accommodate required parking spaces, they often remain vacant, and a neighborhood attribute that should be an asset—beautiful old architecture—instead becomes an albatross. We exploit a natural experiment in the city of Los Angeles to show that removing parking requirements can help stimulate the conversion of old buildings into housing, and thereby help stimulate neighborhood revitalization as well. Our data also allow us to estimate the costs that parking requirements place on new inner city development, and to estimate the value of required parking to drivers.

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## I. Introduction

When a local government requires a developer to provide off-street parking with all new housing, the cost of housing rises while the price of driving falls. The cost of parking, which drivers should pay at the end of their trips, is instead confronted by developers at the start of their projects. The terminal cost of driving becomes an upfront cost of property development. Does the developer pay this cost? If he is a “price-taker”—if, that is, his share of the market is not large enough to influence the overall price of housing—then he cannot build the required parking and pass the cost through to his customers. Rather, faced with the parking requirement, he will build less housing. The final cost of the parking requirement will therefore fall not on the tenants of any one building, but instead will fall across all housing consumers, whether or not those consumers own a car.

Because minimum parking requirements hide a large (indeed, the largest) cost of driving in the cost of property development, they qualify as price distortions. But the fact that a regulation distorts prices is not by itself very interesting; the important question is *how much* the regulation distorts prices, and in what direction. Specifically, how big of a cost do minimum parking requirements place on housing development, and how much of a subsidy do they provide to driving? The answer to these questions will depend on the parking requirement's stringency, and the requirement's stringency will in turn depend on two factors: quantity and location. Most minimum parking requirements prescribe both an *amount* of required parking, and a *place* where that parking must be provided. A parking requirement is more stringent if a local government requires more parking spaces, or allows fewer options about where those spaces can be built. A law that requires 1.5 spaces per apartment, but lets developers to provide some of those spaces off-site (for example, in a surface lot next to the building), is less stringent than a law requiring

the same amount of parking on-site. Likewise a law that requires those spaces to be on-site and covered (such as the law that governs parking in Westwood Village in Los Angeles) will be more stringent still, since covered parking, be it in a garage or underground, costs much more than surface parking.

Because structured and underground parking is much more expensive than surface parking, ordinances that require spaces on-site can be particularly onerous for developers in dense inner cities. In an outlying area where land is plentiful and land values are low, developers can comply with an on-site parking requirement by building a surface lot. In an older, dense inner city area, by contrast--where land is expensive, ownership is fragmented, buildings are close together and frequently occupy their entire lots, and lot sizes themselves are small and irregular--developers will frequently have to build subterranean or structured parking in order to locate the parking on-site. And in some instances developers will not be able to build parking at all; old buildings that predate widespread automobility frequently occupy their entire lots, and frequently have no parking spaces at all. The parking requirement can effectively prohibit the reuse of these buildings.

Here is an anecdote: in February of 2010 developers introduced a plan to rehabilitate a long-vacant and graffiti-covered 1915 building in inner city Indianapolis, and turn it into 24 apartments. The city's zoning code would have required 24 parking spaces to accompany those units, but the building occupied its entire lot, making the parking requirement infeasible. The developers requested a variance from the requirement, and pointed out that the building was surrounded on three sides by surface parking lots, and that three bus routes ran down the street where the building was located. The city's planning staff recommended that the variance be granted. "Urban sites should be developed to the highest intensity possible," the staff wrote in its

report. "To require this site to meet the required off-street parking standards *would require the demolition of a portion of the building or acquisition of adjacent sites*" (emphasis added).

Reusing the building, in other words, would require partially destroying it. Nevertheless, the city's planning commission denied the requested variance, and the building remains empty.<sup>1</sup>

The paradox at work here is both obvious and unfortunate. Denser, built-up areas are where walking and transit use are most feasible; where individuals can most plausibly live without immediate and regular access to a car; and where people who cannot afford cars are most likely to reside. These same inner city areas are also most likely to host old, vacant buildings. Beautiful buildings should be an advantage for inner cities; they are a pleasing amenity that most suburbs lack. Converting these buildings to housing could increase the housing stock, help revitalize downtrodden neighborhoods, and give new economic value (and therefore protection) to historically significant buildings. If, however, these buildings remain vacant, they become an albatross rather than an asset, and contribute to decline rather than rebirth. Just as the social benefits of new housing in disinvested areas are well-documented, so too are the social costs of large-scale vacancy. The parking requirement might therefore cost most where parking is needed least, and could obstruct housing where housing is needed most.

At this point some hypotheses present themselves. First, a local government that relaxes its parking requirements—either by reducing the mandated quantity of parking or by loosening the constraint on where the parking can be supplied, or both—should see more housing development. Second, the housing units that developers build should have less parking on-site, less parking overall, or both. Third, the relaxed parking requirements should permit both the re-use of older buildings, and encourage the more intensive use of underused nearby parking.

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<sup>1</sup> Information about this case can be found at <http://www.aplaceofsense.com/2010/02/indy-parking-policies-fail-its-citizens.html>; the planning documents are available at <http://www.indygov.org/eGov/City/DMD/Planning/Zoning/Documents/he/1-28-10he.pdf>.

These hypotheses are neither new nor novel, but they have long been difficult to test, for three reasons. First, research depends on variance, but parking requirements are consistent and ubiquitous. In an ideal world we could examine housing development in places where local governments place few or no regulations on parking, and then make comparisons to places where local governments regulate parking heavily. In practice, however, parking in the United States is heavily regulated everywhere. Even those few areas that lack parking minimums, such as the CBDs of New York, San Francisco and Boston, have parking maximums. And while maximums are arguably a better policy than minimums, they are not deregulation. Developers often contend that they would provide less parking (and more housing) if given the opportunity, but because that opportunity rarely arises, we have little data to support or contradict this assertion.

Second, the nature of the problem itself makes it difficult to measure. Parking requirements impose a *hidden* cost on housing development, one that is measured in housing units not built. Third, precise data on parking spaces is remarkably difficult to come by. Parking requirements are among the most substantial regulatory hurdles developers face, but few cities collect and systematically organize information about the number and location of parking spaces in their jurisdictions, so correlating the number of parking spaces in an area with the number of housing units is often impossible.

In this paper we evade these methodological difficulties and test the hypotheses above by using original data from a natural experiment. In 1999 the City of Los Angeles passed an Adaptive Reuse Ordinance (ARO) for the city's downtown. The ARO was designed to encourage the conversion of old vacant commercial buildings into housing. To facilitate these conversions, the ordinance offered developers three major incentives. The first was an alternative seismic code that let buildings be classified earthquake-safe without massive reconstruction. The second

was a "by-right" exemption that allowed developers to eschew most of the city's permitting process. And the third was an exemption from minimum parking requirements. Specifically, although developers could not remove any existing parking from a building, they were not required to add any new parking either. The ARO therefore partially deregulated parking for a subset of buildings in downtown Los Angeles.

The law provides a rare opportunity to see the costs of parking revealed. By observing the behavior of developers in response to the ARO, we can make estimates about the costs the law had imposed on older buildings and the neighborhoods where they are located. Our examination of the law yields results that are complicated but coherent, and all our hypotheses are confirmed. First, the passage of the Adaptive Reuse Ordinance coincided with a torrent of new residential development. Long stagnant, the downtown real estate market soared after 1999. Between 1999 and 2008, developers used the ARO to convert almost 70 vacant buildings into over 6,000 units of new housing--more than had been built in downtown Los Angeles than in the previous 30 years combined. Without downplaying the role played by the easy credit of what became the 2008 housing bubble, we can say that the Adaptive Reuse Ordinance was a major reason for this construction. Second, parking deregulation was a necessary but not sufficient aspect of the ARO. Parking deregulation alone did not make this spurt of construction possible, but the absence of the parking deregulation would have made it impossible. Third, developers consistently supplied less parking than the minimum parking requirement would have demanded, and more important supplied the parking in *different places*. For many developers, and particularly those who sold housing at the lower end of the market, removing mandates about the *location* of parking was more important than removing quantity requirements. Fourth, buildings converted under the ARO are more likely to unbundle the cost of parking from their rents. And fifth, almost all ARO



developers direct their tenants to existing off-street parking in the downtown, suggesting that the law has promoted the more intensive use not only of downtown's existing building stock, but also its existing parking stock.

The remainder of the paper proceeds as follows. In the next section we discuss in more detail the manner in which a parking requirement can create a barrier to housing development. In Section III we give a brief overview of Downtown Los Angeles and describe the Adaptive Reuse Ordinance. In Section IV we discuss our methodology. Section V presents results and discussion, and Section VI concludes.

## **II. Parking Requirements as Regulatory Barriers**

While almost all drivers need a place to park, not everyone who wants housing is a driver. For this reason residential parking requirements can harm both poor *people* and poor *places*. In both 2000 and 2007, just under 10 percent of American households did not have access to a car. Although some people who could afford a car choose to live without one, many if not most of these people lack a car because they cannot afford one. Figure 1 shows, for all 18,080 census tracts in the nation's 14 largest urbanized areas, the simple correlation between the share of individuals in poverty and the share of occupied housing units without a car. The correlation is a strong 0.68, suggesting that poverty and the absence of an automobile march in near-lockstep. The simple correlation of households without a car and population density, in turn, is an even stronger 0.73, suggesting that carless households are located in dense areas.

Yet when a local government requires parking spaces with every housing unit, no housing can be built explicitly for households that do not have cars. The parking requirement therefore truncates the housing market at its lower bound. Thus we should not be surprised that developers of low-income housing are among the most vocal critics of minimum parking

requirements. Habitat for Humanity, for example, regularly seeks waivers from parking ordinances, arguing that the laws increase the cost of housing development and provide little benefit to their clients. It is also not surprising that opponents of low-income housing sometimes use parking requirements as way to halt its construction (Husock 2008).

How powerful of a barrier can parking requirements be? Consider another anecdote. In the early 1980s downtown San Diego underwent a spurt of redevelopment, and by 1985 the city had lost a quarter of its 4,600 Single Room Occupancy (SRO) hotel units. SROs are "last ditch" housing--the final net that can catch disadvantaged people before homelessness--so the loss of large quantities of SROs alarmed both city officials and activists. The city declared a moratorium on SRO conversions, and, in an effort to stimulate new SRO construction, created a new zoning code specifically for SRO hotels. The new SRO code differed from the city's usual downtown development ordinance in 27 separate ways, but one of the largest departures was an exemption from minimum parking requirements. In 1986 and 1987, developers built over 2,700 SRO units, including the award-winning Trolley Court, which had 193 hotel rooms but only 19 parking spaces (Bula, 1994).

It is impossible to state with certainty that the parking exemption, as opposed to other parts of the SRO zoning code, led to the increase in SRO units. But it is telling piece that when neighbors wanted to halt the construction of SROs, they did so by re-inserting the parking requirement. The opponents of SRO expansion made little secret of this approach: it was such common knowledge that the *Los Angeles Times* led a 1988 story about an SRO dispute with the following sentence: "An emergency ordinance aimed at curtailing the construction of single-room occupancy (SRO) hotels in the trendy Hillcrest-Mission Hills district was enacted Monday by San Diego city council members, who voted unanimously to require developers to build one

parking space for every hotel room.” In 1989 the city reversed the SRO parking exemption citywide, an act that social policy journalist Jason Deparle said “effectively forbid the construction of new SROs” (Reinhold 1998; Deparle 1993, 1994; Los Angeles Times 1988).

However, a residential parking requirement does not only discriminate against people who don't own cars. If the requirement also mandates that developers provide parking on-site (as many of them do) then it can also constrain the options of people who do own cars. Virtually everyone who owns a car needs a place to park when they get home. But not all of them will want to park *at* their home. Consumers have a range of preferences about *where* they park, and while having a parking space next to (or underneath or inside) your building is convenient, it is also expensive. In almost every area of the economy consumers demonstrate a willingness to trade-off between convenience and expense. But people who purchase housing and automatically purchase on-site parking are denied this option. A person who has no car, or who has a car but would be willing to pay less to park it elsewhere (because he uses the car infrequently, or wants to save money) nevertheless pays the cost of a parking space whenever he pays his rent.

In low-density suburban locations, the fact that residential minimum parking requirement bundles the costs of housing and parking together is probably of little consequence. One advantage of suburban housing markets is that they integrate many services and amenities into a single private space. A typical suburban household might have a house with a yard, a garage to park a car, a washing machine and dryer, a landline phone and a computer with Internet service. Inner city housing markets, on the other hand, are inviting to people with lower-incomes in part because they *unbundle* many of amenities from the housing unit, and allow the costs of these amenities to be spread over many users. As Shiki (2008) points out, dense urban neighborhoods serve low-income people by turning large one-time investments (buying a washing machine) into

smaller disaggregated payments (trips to the Laundromat) that allow more flexibility and require fewer large expenditures. For this reasons inner city neighborhoods tend to have more pay phones, pay laundries, Internet cafes, public transportation services, and so on.

Parking that is unbundled from rent can, where it exists, serve a similar purpose. A person who doesn't own a car doesn't pay for parking as a portion of their rent. Note that this unbundling helps not just people who have low absolute levels of income, but also people who have volatile incomes (for instance, people with seasonal employment). Just as an individual who suffers a job loss, pay cut or expensive health emergency can make fewer trips to the Internet café or Laundromat, so too can they move their car from a more expensive nearby parking space to a more distant, less expensive one, or trade the money cost of paying to park in a lot for the time cost of searching for a space on the street, or sell their car altogether. Bundled parking, however, works against this benefit of disaggregation.

The inefficiency of bundled on-site parking is exacerbated by the sheer abundance of parking that already exists in many inner city areas (Jakle and Scully 2004). As a result of demolitions that left vacant lots, and of commercial parking requirements, a large number of American downtowns already have copious amounts of parking. (Recall our example from the introduction, where a vacant building was surrounded on three sides by parking lots). In general, the times of peak occupancy for these downtown spaces—particularly the spaces attached to commercial buildings—do not overlap with peak occupancy for residential buildings. Most commercial parking is occupied during the day, while most residential parking s occupied in the evening and at night. And even during the day commercial parking spaces tend to be underused, because zoning ordinances often require enough parking to accommodate drivers at the busiest times during the busiest days (Shoup 2005). The supply of excess parking spaces suggests

potential for gains-from-trade: if a portion of inner city residents would be willing to rent already-existing spaces, and if the current owners are willing to let them, then developers can build less parking and more housing units. Both vacant buildings and existing parking spaces could become better-used.

### **III. Downtown Los Angeles and the Adaptive Reuse Ordinance**

In its heyday, downtown Los Angeles was truly a city center. Wealthy citizens lived in Victorian mansions on Bunker Hill. Entertainment could be found at the grand theaters and movie houses on Broadway, and the financial district stretched out from the intersection of Main and Spring Street. Charlie Chaplin lived in a downtown hotel. But like many American downtowns, downtown LA peaked in population, and declined steadily thereafter. “Nobody loves downtown,” Richard Mowbray wrote in 1969. “Downtown is something [you] and other freeway drives are pleased to hurtle by without stopping.” Reyner Banham, in his famous exploration of Los Angeles, called downtown “supremely irrelevant.” Nowhere else, he wrote, “does one have quite such a strong feeling that this is where the action cannot possibly be.”

The sorry state of the downtown was not owing to an absence of public efforts to revitalize it. In 1949 Los Angeles launched its first urban renewal project, on the once-glamorous and then-decrepit Bunker Hill. The city’s redevelopment agency took Bunker Hill by eminent domain, displaced approximately 10,000 residents, razed its homes and flattened the hill itself, and set about to build middle-class housing and Class A office space in the city center.

But decline is hard to fight, or at least hard to fight successfully. Bunker Hill was only the first of five redevelopment zones in Downtown Los Angeles. By one estimate the CRA alone spent over \$2.5 billion on the redevelopment of Downtown between 1950 and 1995 (Gordon and Richardson 1998). Despite this effort, success has been elusive. A list of projects financed by

city and county agencies reads like a history of inner-city revitalization trends: taxpayer dollars helped finance a concert hall, a theater, a convention center, and an art museum, as well as two rail lines that originated in Downtown LA. In the years after 2000, the public would build an additional downtown rail link, and help construct a sports stadium and a convention center hotel. The renaissance, however, was slow to materialize, and some projects had unintended consequences. The redevelopment of Bunker Hill proceeded slowly; photos taken in the 1980s show large tracts of vacant land still waiting to be redeveloped (many of them were operated as parking lots during the decades of inactivity). When the site finally approached completion, the new Class A office space on Bunker Hill drew a number of firms out of older buildings in the downtown's Historic Core. Filling the new buildings emptied the old ones, increasing the stock of vacant historic commercial buildings.

Table 1 shows some social and economic characteristics of Downtown Los Angeles from 1970 to 2000, and compares them to Los Angeles County as a whole (Los Angeles County is the Los Angeles Metropolitan Statistical Area). Assembling quantitative data on the downtown is necessarily subjective, because there is no single definition of "downtown." Within Los Angeles, however, there is an informal consensus that downtown Los Angeles is the area bounded by the 10, 110, 101 and 5 freeways. We use Census data from this area for the table.<sup>2</sup>

We can discern a number of points from the table. First, by most measures, downtown revitalization efforts made scant progress in the last three decades of the twentieth century. Although the area's population grew faster than the county's, this is largely an artifact of the downtown's small absolute numbers and the county's very large absolute numbers. A more significant statistic is that downtown Los Angeles remained consistently poorer than the LA

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<sup>2</sup> This area roughly conforms to what the Los Angeles Department of City Planning considers the downtown. It is somewhat smaller, however, than what the CRA considers "downtown"—by the CRA's definition, there are 7 redevelopment zones in the downtown, not five.

MSA, and actually grew poorer over time. In every decade after 1970 downtown Los Angeles had than half the average household income of the Los Angeles MSA, and the poverty rate in grew from 26 percent in 1970 to 45 percent in 2000. In the MSA as a whole, the poverty rate fell from 25 percent to 18 percent.<sup>3</sup> In every decade the downtown also had over three times as many housing units built before 1939 than did the MSA, which reflects (in part) the absence of new construction in the area.

The bottom rows of the table show that in transportation characteristics, downtown Los Angeles differs dramatically from the region at large. Since 1980, LA County has had more households with three or more cars than households with no car at all. The downtown is an exception to that trend. In 1980 almost 80 percent of all households in the downtown didn't have a car, and by 2000 that share had fallen only to 65 percent. Only 2 percent of downtown households had three or more cars in 2000, and only in 2000 did the share of downtown residents driving to work exceed the share walking. Largely as a result of their poverty, downtown residents in 2000 were half as likely to drive to work as the average county resident, and four times as likely to walk.

The downtown had also long had a lot of parking spaces. In 1959 Seymour Taylor, general manager of LA's Department of Traffic, reported that 38 percent of the surface area of downtown Los Angeles was parking. In 1966 Wilbur Smith Associates, using 1960 data, said the figure was 25 percent. And in 1999 Newman and Kenworthy reported that the LA Central Business District had over 107,000 parking spaces, making it one of the most parking-dense

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<sup>3</sup> In part—though only in part—the higher poverty rates might reflect both the growth of LA's homeless population, which is concentrated in downtown's Skid Row area, and the progressively greater accuracy of the Census in counting the homeless.

CBD's on earth.<sup>4</sup> This proliferation of spaces was the cumulative result of three factors. First, the decline of downtown land values, which began in the Great Depression but continued throughout the middle of the century, led landowners to demolish buildings and operate them as "taxpayer" parking lots.<sup>5</sup> Second, as we already mentioned, urban renewal programs resulted in the razing of many buildings, but the slow process of assembling and redeveloping land led to many sites being operated as surface parking for decades. And third, in instances where redevelopment was successful, the downtown's high minimum parking requirements ensured that plentiful parking accompanied every new building (Manville and Shoup 2005).

Thus by the year 2000 downtown Los Angeles had a series of expensive redevelopment projects that had yielded few results; a poorer, non-driving population; a large amount of surplus parking; and a large collection of vacant commercial buildings, many of them historically significant. In the 1990s these buildings were selling for between \$2 and \$5 per square foot, largely because they had little future but vacancy. A number of landlords leased the buildings as movie sets—the dystopic set of *Fight Club*, for instance was in a vacant commercial building, and for a time during the Internet boom of the late 1990s telecommunications companies used them as well, filling a number of the old buildings with switching equipment.<sup>6</sup> But neither of these uses was very high-intensity, and they did little for their neighborhoods.

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<sup>4</sup> Many of these spaces were in surface lots. In 2005 the *Los Angeles Business Journal* reported that L&R Investments, a private parking operator that owns primarily surface lots, by itself controlled over 10,000 downtown parking spaces, on 53 lots that spanned 14 acres. See Fixmer (2005a).

<sup>5</sup> The conversion of buildings to parking spaces to avoid property taxes was a common response to downtown decline. An interesting and unintended policy response to this problem is the downtown Boston Parking Freeze, which was implemented through an Environmental Protection Agency mandate in 1977. The freeze, which stopped the expansion of commercial parking lots in downtown Boston, had little impact on air quality (its original intent) but it halt the demolition of buildings in Boston's financial district. (Interview with Bryan Glascock, Boston Parking Freeze Director, June 5, 2008, also see "Parking Freezes in Boston" <http://www.cityofboston.gov/Environment/sbf.asp>).

<sup>6</sup> By 2001 telecommunications companies occupied 3.4 million square feet of space in the downtown—fully 8 percent of the downtown's commercial real estate. This caused some concern among the developers who were at this point beginning to redevelop vacant buildings, because the telecom companies filled buildings with more equipment than people. In late December 2001 the City Council had brokered an agreement between the telecom



Reusing these buildings as housing could restore economic vitality to historic structures, and spur revitalization while minimizing fears of gentrification--converting empty commercial buildings into housing ensures that the redevelopment does not directly displace anyone.<sup>7</sup> Adaptive Reuse also offers the possibility of inner city development without direct government subsidies or other positive action. For example, at roughly the same time the downtown ARO was approved, the city became involved in a downtown redevelopment project built around the Staples Center sports arena. The Staples Center project required the city to take over 70 acres of land by eminent domain and to demolish the structures on that land, and then grant additional direct subsidies to developers, first for the stadium and later for a luxury hotel and condo complex nearby. The city's actions also triggered a contentious battle over the potential gentrification of the nearby area, culminating in a series of protests, a protracted lawsuit and ultimately a community benefits agreement.

Adaptive reuse can evade some of these conflicts. But adaptive reuse is also difficult. At the end of the 1990s no one had converted a large office building into residential units since the 1970s.<sup>8</sup> Not all buildings are good candidates for residential conversion. Older office buildings are ideal, because they were designed to let in plentiful natural light. Old warehouses and department stores, by contrast, have deep floor plans that don't let in light. Reusing a warehouse or department store frequently means cutting in light wells--at the cost of floor space--or building large units. But large units themselves entail risk; a big unit is a luxury unit, meaning it can be a condo but is unlikely to work as a rental, and a luxury unit also demands on-site parking.

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companies and developers; no more than 25 percent of the space in a building in the downtown's historic core could be rented to a telecom company. In the rest of the downtown, telecoms could not rent more than 80 percent of a building. The agreement never became law, in part because the Internet bubble burst and the telecoms left (Rimensnyder 2001).

<sup>7</sup> Of course, successful adaptive reuse can contribute indirectly to gentrification and displacement, by increasing surrounding land values and rents.

<sup>8</sup> Maguire Partners had converted the Pacific Telephone and Telegraph tower into 308 units for senior citizens (Berton 1996).

Even for buildings suitable for conversion, regulations designed for twenty-first century housing are often incompatible with housing built 50 or 100 years ago. Virtually every old building in the downtown was illegal under contemporary seismic codes. In addition, most (though not all) of the buildings were illegal according to parking codes, because they had little or no parking on-site (Berton 1996). Finally, developers and especially lenders tend to shy away from inner city areas because of the uncertainty in the development process. Land and housing prices in downtowns can be unstable, and high levels of uncertainty about future prices can make developers unwilling to invest.<sup>9</sup> Lenders will sometimes also associate disinvested urban areas with regulatory uncertainty. Re-zoning a vacant commercial building for housing can require multiple variances, and at each stage planners might attach new conditions to a project. Lenders already leery of a downtrodden neighborhood are further concerned by the prospect of more and different requirements being tacked on to a project.

The Adaptive Reuse Ordinance was designed to mitigate these three barriers. First, recognizing that most of these buildings were practically if not legally earthquake-safe (they had stood for 50-100 years without any seismic problems) city engineers designed an alternative seismic code for older buildings. Second, the ARO gave developers a "by-right" exemption, meaning that re-zoning as residential could occur without any need for variances. And third, the law stated that while any parking on the site of a vacant building in 1999 could not be removed, developers did not have to provide any additional parking. The law initially applied to any commercial or industrial building in the downtown built prior to 1978 that had been vacant for

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<sup>9</sup> See for instance Cunningham (2006).

more than two years. It was later expanded to include vacant commercial buildings constructed during the 1980s, and then also expanded to cover the entire city.<sup>10</sup>

#### **IV. The Impact of the Adaptive Reuse Ordinance**

##### **4a. Did the Adaptive Reuse Ordinance Contribute Significantly to the Downtown Housing Stock?**

Although the city council approved the Adaptive Reuse Ordinance in 1999, neither city planners nor real estate professionals expected the law to have a large impact, and certainly not an immediate impact. In 1996 a veteran real estate broker had estimated that the downtown had “a dozen” buildings that could be converted to housing if various regulatory barriers were removed (Berton 1996). By 2005, 27 buildings had been fully converted, resulting in over 3,000 new downtown housing units. A complicating factor in assessing the ARO is that this construction took place amid a larger housing boom in the downtown. The 2010 census will be the final arbiter of just how large the downtown housing boom was, but the Downtown Los Angeles Business Improvement District, which tracks housing starts in an area roughly the same as the geography used for Table 1, reports that between the ARO’s adoption in 1999 and third quarter 2009 the downtown added 15,474 housing units. Of course, not all of these housing units were ARO conversions; developers also built a lot of “ground-up” housing during this time. Some of this new construction was spurred by the success of ARO developments, some was the result of the housing bubble, and some was the result of a large publicly-backed redevelopment in the South Park neighborhood, near the University of Southern California.

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<sup>10</sup> Shoup (2005), in his recommendations for parking reform, suggests that market-priced curb parking should precede the removal of minimum parking requirements, because preventing overcrowded curb spaces is the primary justification of off-street parking requirements. In Los Angeles this policy chronology was reversed; the Adaptive Reuse Ordinance was approved in 1999, and ten years later the city began planning for an experiment with performance-pricing for curb spaces. The sheer amount of underused parking in the downtown probably accounts for this anomaly. Were there no underused off-street parking spaces in the downtown, the ARO may not have been implemented.

Even with those qualifiers in mind, however, we can make some conservative estimates about the contribution of the Adaptive Reuse Ordinance. We obtained a list of Adaptive Reuse projects issued by the Mayor of Los Angeles's Office of Economic Development. We augmented this list with new conversions that we tracked through downtown newspapers, real estate development blogs, and development trade periodicals. The list shows 65 conversions in Downtown Los Angeles, the vast majority of which were permitted and built by 2008, meaning that while these projects represent the bulk of all ARO activity in the downtown, they do not represent all of it. (An advantage of using this slightly older list is that helps avoid counting projects that were permitted but never built as a result of the housing downturn). These 65 projects represented 7,208 housing units. Two of these projects, 1010 Wilshire and 1100 Wilshire, are just outside the downtown boundaries laid out above (they are slightly west of the 110 freeway), so we remove their 455 housing units from the total. That leaves 6,753 housing units in the downtown boundaries we defined in Figure 2. So using conservative estimates, we can say that from 1999 to 2009, the Adaptive Reuse Ordinance *by itself* added over 6,700 units of housing. Looking again at Table 1, we see that between 1970 and 2000 Downtown Los Angeles added 4,300 housing units (from 8,900 to 13,400). The ARO is therefore responsible for more housing construction in 10 years than all private and public sector development of the previous thirty years combined.

#### **4b. Did the Parking Exemption Contribute to the ARO Housing Boom?**

Asserting that the ARO played a role in downtown's residential resurgence is different from asserting that the parking provisions of the law played a significant role. Because the Adaptive Reuse Ordinance relaxed a number of regulations, attempts to evaluate it confront the "multiple treatment" problem: it is possible that one or more of the exemptions granted by the

ARO was unnecessary, and that the same amount of new housing could have been built even if those exemptions were not offered.

There is no clear way to isolate the effect of the parking exemption. The most reasonable approach, which we employ, is to both ask developers about the parking exemption and then observe their behavior with respect to it. If the developers say that the parking exemption was essential, this would be suggestive but hardly definitive. Developers have an incentive, after all, to argue that any deregulation is imperative. If the developers also matched words with deeds, however, and consistently provided less parking than the conventional zoning code would have required, then that is firmer evidence. It is not ironclad evidence, however; the fact that a developer *exploited* an exemption does not mean the exemption was *necessary*. However, if developers consistently build less parking than the zoning would otherwise have required, this *does* suggest that the parking requirement itself might be excessive. It may be that developers could have converted the ARO buildings under conventional parking standards. However, if many of these buildings do have less parking, this would nevertheless suggest that housing can be built profitably without parking regulations.

### **Developer testimony about the parking exemption**

We interviewed a total of eight developers, who had in total converted 17 buildings into 1,940 housing units. We also interviewed a planning consultant who has assisted in the conversion of numerous ARO buildings, and spoke to an architect who helped convert 10 downtown buildings into about 2,000 housing units. We supplemented these interviews with information from newspaper articles and trade periodicals.

The overarching themes that emerged from our interviews are as follows: the parking exemption was a necessary but not sufficient component of the ARO. In the absence of the

alternative seismic code, virtually all of the buildings would still be vacant. Nevertheless, while the parking exemption *alone* would not have permitted the redevelopment of the buildings these developers worked on, but the absence of the parking exemption may well have prevented it. Developers of high-end housing noted that the parking exemption was less important for their units (because buyers of high-end housing often want parking on-site). For these developers, the most important facet of the ARO was its by-right exemption, which minimized the development's uncertainty, and allowed to reassure the large banks they needed to finance their projects. As one such developer put it, "Financial institutions don't understand, and don't want to understand, the planning process. They just want to know that you have approvals and that nothing will change." Notably, however, these developers--while providing more parking spaces than other ARO developers--nevertheless supplied less parking than the city code would have demanded.

Almost all the people interviewed also stressed that while the parking exemption was important, its importance did *not* stem from allowing developers to provide no parking at all. Lenders are reluctant to finance a residential development in Los Angeles that provides no parking at all, so almost every Adaptive Reuse development made some provision for parking. (The lone exception, notably, was a small project--three units--that was low-income housing). For developers, the ARO's exemption was valuable not because it allowed them to forego parking altogether, but because it permitted them to be creative in how they supplied parking. The parking exemption also allowed developers to more finely segment the housing market--to target individuals who owned no cars and didn't plan to acquire them; who owned no cars but were considering purchasing them; who owned cars but were willing to store them away from their building, and so forth. As one developer put it:

Government regulations have a way of being set in stone, and unless there's some ordinance that reverses that sort of powerful and unmovable object, you end up with "no" as your first answer. Whereas the market in this case--and the financial institutions--present you with a problem, which is "Well, what are you gonna do about parking?" And then you're left to create this sort of wacky, you know, unconventional solution to the parking problem. And that's what happened, I think, in the case of adaptive reuse.

A minimum parking requirement, in other words, presents a developer with a problem (how to supply off-street parking), and also tells the developer how to solve that problem (provide a set number of spaces on-site with every unit). The parking exemption, by contrast, doesn't remove the problem (some parking was still necessary), but it does remove the one-size-fits-all solution.

The "wacky, unconventional" solutions that developers adopted generally represent an attempt to satisfy lenders, minimize development costs, and maximize the sales potential of the building. Often this involved leasing underused off-site parking spaces nearby, constructing some on-site spaces in the mezzanine or basement of the existing building, or some combination of both. A small handful of ARO developers had purchased older commercial buildings in the downtown in the early 1990s, at prices (\$2 to \$4 a square foot) that reflected the structure's commercial obsolescence. These developers were able to use private loans, often with high interest rates, to finance the conversion of their buildings. (The high interest loans were affordable because of the low initial investment in the buildings, and because interest rates were

falling). The most prominent of these developers, Barry Shy, has converted eight buildings in the downtown, none of which have bundled parking. A competing developer notes that Shy's use of private lending puts him "outside the traditional development community," but added that "he delivers a loft product that is 20 to 25 percent below market rate, and it serves a real purpose."

For developers who want to build higher-end housing, and need the backing of large financial institutions to do so, parking provision can be complicated. Put simply, the developer needs to demonstrate to lenders that they have a certain amount of parking, in a nearby location (if not on-site), and that parking will be available for the life of the building loan. The last part is important: redevelopment can be stymied if leased parking is not guaranteed for the length of the loan. "We have many developers beating a path to our door saying they have a property they know is a good prospect for conversion," a redevelopment official told the *Los Angeles Business Journal* in 2005, "but their financial sources say they don't have enough parking. In some cases, they can get parking today and tomorrow but not for the life of the loan" (Fixmer 2005).

Freed from minimum parking requirements, developers can meet lender's demands in a variety of ways. A good example is the Pegasus Lofts, a 500,000 square foot building which had once been corporate offices for Mobil Oil. The Kor Group purchased the building in 2001 from the large real estate company Kennedy-Wilson. The building, at the time Kor bought it, had a basement parking structure with 50 parking spaces. Kennedy-Wilson also owned a commercial parking structure three blocks away that had 700 parking spaces. When Kor purchased the Pegasus building, it also entered into a 99-year lease agreement for parking spaces in the off-site garage. However, because Kor wanted to develop high-end rental units, the company knew it would need a large quantity of on-site parking, because high income tenants often want parking in-building, and large institutional lenders often want to see attached parking with any proposal



for luxury units. Kor's plan was to convert the second and third stories of the Pegasus into a parking garage, but it was not clear at the time of the sale that the city would permit this renovation.

To resolve this uncertainty, Kor and Kennedy-Wilson agreed to an arrangement where Kor agreed to purchase the Pegasus *if* it won city approval to convert part of the interior to a parking structure. If the approval was granted, Kennedy-Wilson would become a minority partner in the Pegasus. If the city didn't grant its approval, Kor could return the building.<sup>11</sup> As it happened Kor did succeed in getting its approvals, and the company turned the Pegasus into 322 rental lofts with 200 in-building parking spaces.

At this point, Kor took two additional steps. First, the company signed a 30 year lease with a small off-site garage one block away from the Pegasus. Then it unbundled its on-site parking. When the Pegasus opened, its tenants received a parking space in the lot one block away bundled in with their rent. Tenants who opted not to use this parking, however (either because they had no car or wished to arrange parking on their own) could forego the space and get a rent discount. Tenants who wanted a space on-site, meanwhile, paid a premium for it--usually between \$150 and \$250 a month. Kor varied the price to ensure that some on-site parking spaces were available when one of the building's luxury units became vacant. "We basically played with supply and demand as we leased the building. And we're still doing it. You need a manager who understands game theory."

The parking spaces in the building three blocks away, meanwhile, are leased primarily to nonresidents--office workers and other downtown commuters. The primary purpose of that

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<sup>11</sup> This arrangement was made possible in part because the Pegasus was owned by a large real estate firm like Kennedy-Wilson. Kennedy-Wilson's size enabled it to wait. A number of other Adaptive Reuse buildings were owned by lone entrepreneurs, and these owners would likely have wanted cash up front.

parking structure was to get the loan--the 99 year lease makes the lenders comfortable, while the smaller, closer garage with a 30 year lease helped sell the building.

A similar arrangement exists at the Gas Company lofts, which also offer high-end rental units. The Gas Company building has 50 subterranean spaces, available at a premium to tenants who want them. Other tenants park in a structure across the street from the building, which the developer also owns; the price of the off-street space is bundled into rent. This arrangement gives flexibility to both the developer, CIM group, and the tenants. For tenants, the option of moving back and forth between on-site and off-site parking allows for flexibility in the face of financial volatility. CIM reports that as Los Angeles entered the recession in late 2008, more and more tenants moved from on-site underground parking to off-site structured parking in order to save money. For the developer, the absence of a parking requirement allows for more efficient use of the parking structure. As one CIM official put it:

Effectively, over time parking becomes a limited commodity, and by not encumbering it exclusively to residential use it can garner the highest available return.

The lengths to which these developers went to provide parking are somewhat extraordinary, and in some ways are a testament to the crucial role parking plays in residential development, even in dense CBDs. At the same time, however, these lengths also show, albeit indirectly, how expensive the conventional parking requirement would have been to comply with. Without the Adaptive Reuse Ordinance, the Pegasus Lofts would have required at least 322 on-site parking spaces, and the Gas Company would have required 251. But the Pegasus provided 0.6 spaces per unit on-site, and the Gas Company provided 0.2. If we accept the seemingly-reasonable proposition that the developers pursued the least-costly way to supply

parking, then the fact that all these arrangements are cheaper than compliance with the parking requirement suggests that the parking requirement is onerous indeed.

### **Do Unregulated Developers Provide Less Parking than the Zoning Would have Required?**

An ideal test of the ARO would compare the amount of parking ARO developers provide with the amount of parking the downtown requirement would have forced them to provide, while controlling for the amount of parking already in place. Unfortunately, reliable data on parking is difficult to obtain. Planning for parking is atomized and performed on a building-by-building basis. When a developer constructs a building he must demonstrate to planners that he has provided parking for that building. If another developer arrives and develops the adjacent parcel, he too will be required to provide parking for the land use he has planned. But because each developer provides parking *only* for his building, neither the developer nor the planners have any incentive to compile and track the total number of parking spaces on a given block, let alone in a city. Therefore in most cities there is no straightforward way to determine the actual number of parking spaces in a given place, and determining the amount of parking in place previously is more difficult still.

We gathered information on ARO parking spaces in the following way. Using the list of 65 ARO developments provided by the office of the Mayor of Los Angeles, we contacted the leasing agencies for every building and asked a series of questions about how the building dealt with parking (i.e., were spaces on-site, did they come bundled with units, etc.) If a building was fully leased or sold, we contacted its management agency or homeowners association. In a few instances we also spoke to residents, and we validated our information both by contacting each building twice, and by examining rental advertisements on real estate web sites. For most buildings, we were told how many parking spaces were allocated to each unit. In some instances,

however, buildings assigned spaces based on the number of bedrooms in each unit. For these buildings we obtained a breakdown of the number of 1-, 2- and 3-bedroom units, and then constructed a weighted per-unit average.<sup>12</sup>

Our approach to collecting parking data has one large advantage and one large disadvantage. The advantage is that officials associated with leasing and managing the buildings have strong incentives to have accurate information about how parking works in the building. Both current and potential tenants frequently asked about parking, and as a result the leasing agents are aware of arrangements—such as parking spaces leased in a nearby garage for the benefit of residents—that will not show up in city planning documents.<sup>13</sup> The disadvantage of our approach is that leasing agents rarely if ever know how many parking spaces a building had prior to its conversion. As a result we are unable to fully control for the prior presence of parking spaces.

We were able to assemble information on 55 of the 65 buildings--a total of 6,607 housing units. We can use this data to compare the amount of parking ARO buildings provided with the amount of parking they *would have had to provide* in the absence of a parking exemption. Table 4 shows the residential parking requirements in downtown Los Angeles. The city's zoning code requires developers to provide one on-site parking space for each rental unit with less than three "habitable rooms" (a habitable room is defined as a kitchen, common area or bedroom). For units with over three habitable rooms (i.e., a two bedroom apartment) the requirement is 1.25 spaces per unit. Because we do not have data on the number of rooms in each unit (we have building-

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<sup>12</sup> For example, in the South Park Lofts, 1 and 2 bedroom units come with 1 parking space each, and 3 bedroom units get 2 spaces each. The building has 21 1-bedroom units, 7 2-bedroom units, and 21 3- bedroom units. Hence we construct a space-per-unit average for the building by multiplying  $(28/46*1) + (21/46*2) = 1.5$ .

<sup>13</sup> For about 50 of these buildings, we did examine building permits and certificates of occupancy. Almost none of them included information about parking, and of those that did, the information was usually inaccurate or incomplete. For example, a certificate of occupancy might indicate that a building had 20 parking spaces on-site, but it would not be able to tell us if the loft management had rented spaces elsewhere.

specific rather than unit-specific data) we err on the conservative side and assume that all rental units would have required 1 parking space apiece.

For condominiums, the parking requirement is somewhat more ambiguous. Condos in Los Angeles are regulated not just by the zoning code, but also by an advisory agency formed specifically to oversee condos. The advisory agency has determined that downtown is a “parking impacted area” and until 2005 as a result of this determination usually required 2.25 to 2.5 parking spaces per condo. In 2005, however—in part because of criticism from planners and developers, and in part because of the success of the Adaptive Reuse Ordinance—the Advisory Agency began mandating less parking for condos, and now usually requires between 1.5 to 2 spaces per unit.

The fact that the ARO may have influenced the parking requirement introduces a troublesome piece of endogeneity into our study, for which there is no particularly good solution. Many of the condos in the sample were permitted prior to 2005, and as such would have been required to provide between 2.25 and 2.5 parking spaces per unit. Some of the condos are newer, however, so we err on the conservative side and assume that condos would have been required to provide 2 spaces per unit.

Table 5 compares the requirements to the actual amount of parking provided at Adaptive Reuse buildings. Because apartments and condominiums have separate requirements, the table deals with them separately. A few points stand out. In terms of the absolute number of parking spaces available, unregulated apartment developers do not appear to behave much differently from what the zoning code requires. The downtown parking requirement calls for roughly 1 parking space per unit, and Adaptive Reuse developers actually provided, on average, slightly more spaces than that (1.2 spaces per unit). The key difference, however, lies in *where* those

spaces were provided. Developers provided only half of those spaces, on average, on-site. And ARO developers tended not to provide spaces automatically, bundled in with rent. Thus while ARO developers provided 1.2 spaces per housing unit overall, they provided only 0.6 spaces per unit on-site, only 0.7 spaces bundled in with rent, and only half of a space on-site and bundled.

The situation with condominiums is much the same. The 19 condo buildings in the sample account for just under 2,100 housing units, and on average each of the housing units is accompanied by 1.3 parking spaces. Because the condominium parking requirement in downtown LA is so high, this by itself represents a substantial reduction in parking (even using the lower-bound comparison of two spaces per unit). As was the case with rental units, however, the difference is magnified once the location of parking is taken into account. ARO condos provide slightly less than 1 space per unit on-site, and provide just over 1 space per unit bundled in with rent.

As is often the case, the simple averages mask some dramatic variation. The luxury units at 1100 Wilshire have 3 parking spaces, while 16 ARO buildings—some condo and some rental—provide no on-site parking at all. A number of other buildings provide some combination of on- and off-site parking spaces. The combination of on- and off-site parking owes to both architectural constraints and an effort at price discrimination. The Milano Lofts, for instance, have 30 spaces beneath the building, and leases 70 additional spaces in a commercial garage across the street. Residents who want an underground space pay more than residents who are willing to park off-site.

### **Costs of the Parking Requirement, in Housing Units or Dollars**

We can use the results above to make some estimates about the costs of downtown's residential parking requirement. One way to do this is to take the number of parking spaces

provided on-site and calculate the number of housing units the zoning code *would have allowed* given that number of parking spaces. So for example the Pegasus lofts have 200 on-site parking spaces for 322 units. Under the most lenient assumptions, the downtown parking requirement would only have permitted 200 housing units in the Pegasus were it not for the ARO (1 space per unit, assuming that all units in the building have only one bedroom). The parking requirement would have resulted in the loss of 122 housing units.

If we make this calculation across all 55 buildings, and employ a very low-bound of 1.5 spaces per condo unit, we find that on average the parking requirement would have cost 42 spaces per converted building, or 2,310 housing units altogether. If we employ a more slightly higher (and probably more realistic) standard for condos--2 parking spaces per unit-- then the average climbs to just under 48 housing units per building, or 2,640 housing units lost.

These calculations probably understate the impact of the Adaptive Reuse Ordinance, because there is no guarantee that these buildings would have been financially feasible with fewer housing. Consider again the Pegasus Apartments. The Pegasus building is 11 stories, with the ground floor being retail and the second and third story providing 200 parking spaces. If the remaining eight stories could only hold 200 rental units rather than 322, each of those units would need to be much larger. Larger units, however, pose more risks to developers. A building full of large units gambles on a steady availability of wealthy buyers. For this reason large units are more suitable as condos than rentals--but condos legally require more parking. In the unlikely event that a building full of large units remained rentals, the units would nevertheless be likely to have more bedrooms, which would also require more parking. Conceivably, the developers of the Pegasus could have added parking spaces rather than lost rooms--converted two more stories to parking and then fit 322 apartments into the remaining six stories--but at that

point the apartments are very *small*, and the development might again fail to pencil out. It is possible, in other words, that with a full on-site parking requirement the building simply would not be feasible, and all 322 units of housing would have been lost. The structure would have remained vacant.

A second way to evaluate the impact of the ARO's parking exemption is to estimate the cost of a downtown parking space, and then use that to estimate the size of the barrier the parking requirement would have placed on ARO conversions. Carl Walker Associates tracks parking costs throughout the United States, and reported in 2009 that the median price of a structured parking space in Los Angeles was \$16,842, or about \$51 per square foot. RS Means estimated a slightly higher cost, of \$59 per square foot or \$19,470 per square foot. Construction costs in the downtown, of course, will be more expensive than median-priced land, and a lot of on-site downtown construction would likely need to be subterranean. The Pershing Square subterranean garage, located near the downtown's historic core, cost \$2,500 per space when it was built in 1925, which translates to roughly \$30,000 per space in 2009 dollars.

Assume that structured downtown parking costs \$20,000 per space, and subterranean parking costs \$30,000 per space. Recall that the average ARO apartment provided 0.4 spaces fewer per unit on-site than the zoning code would have allowed, and that condos provided 1.1 fewer spaces per unit. If all of these spaces could have been added as structured parking, then this space would have added \$10,000 to the cost of each apartment unit, and over \$20,000 to the cost of each condo unit. If these "missing" spaces were to be built with an underground structure, by contrast, each apartment space would cost \$15,000 extra per unit, and each condo space would have added an extra \$30,000 per space.



Perhaps the best way to think about this data is as follows. The Pegasus is a successful building, with 2010 rents ranging between \$1,200 and \$3,000 per month. Were a developer to build a ground-up site next to the Pegasus that mimicked it in size and style, the developer would need to spend an extra \$3.2 million (322 units times \$10,000 per unit) in order to comply with the zoning law. Note that compliance with the zoning law is *not* equivalent to building enough parking for economic viability. The Pegasus already demonstrates that the building, with its current levels of parking, is viable. The extra \$3 million would simply be the cost of the parking requirement.

### **Unbundled Parking Spaces: Price to Tenants and Value to Drivers**

Twenty of the 53 buildings charge tenants for either a first or second space, and while some buildings charge a uniform rate for parking (i.e., a parking space at the Bartlett Building lofts costs \$100 per month) others buildings vary the charge by the type or location of the space. For example, tenants in the SB Grand Lofts can pay \$200 per month to park one car in the building, \$300 per month to park two cars, or \$100 per month to park in an adjacent surface lot. The Little Tokyo lofts, a condo property, sell a limited number of parking spaces to residents. Buyers in the Little Tokyo Lofts get one parking space with their unit, and can pay \$16,000 to own a second one. An underground spot in the Higgins Building, meanwhile, costs about \$45,000 to own.

Overall, the average cost of an unbundled parking space is \$138 per month.<sup>14</sup> If we assume that \$138 per month is a rough estimate for the cost of a market-priced parking space downtown, we can create a back-of-the-envelope estimate of the subsidy that bundled parking gives to driving. Assume that an individual rents a downtown apartment for \$1,000 a month, of which \$140 represents the cost of the parking space. That is, were the parking unbundled from

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<sup>14</sup> This is a weighted average.

the unit, monthly rent would be \$862 per month. Over the course a year, then, the parking space adds \$1,656 to the individual's housing costs. If the individual drives 12,000 miles year (the national average for households, then hiding the cost of parking in the cost housing reduces the average cost of driving by 14 cents per VMT.<sup>15</sup> To put the size of this subsidy into perspective, now assume that the individual's car gets 25 miles per gallon. Since combined state and federal gas taxes in California are 63.9 cents per gallon, the gas tax increases his cost of driving by 2.5 cents per VMT.<sup>16</sup> The bundled parking, in other words, reduces the cost of driving by far more than the gas tax increases it. The gas tax would need to be raised almost sixfold before it penalized driving by the same amount that bundled parking subsidized it. Increasing the costs of gasoline would not be nearly as effective as *revealing* the cost of parking.

### **Sensitivity Analysis**

One possible objection to our approach is that we are comparing ARO developments to a fictional baseline--that no developers really adhere to the zoning code, so the losses we have estimated are overstated. As a check on these results, we also collected data on ten non-ARO developments in the downtown that had been developed since 1999, which totaled 3,629 housing units. These buildings provided an average of 1.7; with a low of 1.2 and a high of 2.3. The rental apartments supplied 1.6 spaces per unit, and the condos 1.7. All of the buildings had spaces on-site, and all bundled their spaces in with rent. Further--most likely because the parking was on-site--none of these buildings provided spaces in a surface lot. All the parking spaces were either in garages or subterranean structures, or some combination of both.

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<sup>15</sup> 1,656 divided by 12,000.

<sup>16</sup> As of 2007, the national average for fuel economy in passenger vehicles was 22.5 miles per gallon. 12,000 miles divided by 25 mpg = 480 gallons of gas. 480 \* 63.9 = \$307 in taxes, divided by 12,000 miles equals 2.5 cents per mile. Assuming a lower fuel economy vehicle does not meaningfully alter the size of the subsidy; if the car got 20 mpg, the gas tax impose a cost of three cents per mile.

Some of the buildings in the sample of new construction, especially the condos, have lower parking ratios than the zoning code would suggest. In part this is because the condos are newer, but in part it also represents the time, money and effort required to secure variances. Three of the lowest parking-space-to-unit ratios are the South Group buildings. Securing reduced parking requirements was a primary objective of the developer, and the process --which one of us participated in as (one of many) consultants, was long and costly.

Indeed, there are good reasons to believe that our costs estimates are actually underestimates. First, although we could not get reliable, systematic information about how much parking was available at each building in 1999, we do know that a number of buildings had large quantities of parking prior to their conversions. The 1100 Wilshire Building, for example, sits atop an 11-story parking garage. Similarly, Factory place Lofts were surrounded by a large surface parking lot.<sup>17</sup> It is possible that in the absence of these spaces developers would have built them anyway, but in practice we cannot assume they are evidence of "unregulated" parking provision.<sup>18</sup> Second, we know that some of the rental units have more than three habitable rooms, which would have increased the parking requirement to 1.25 spaces per unit. We used the Downtown Loft Exchange web site, which tracks downtown loft transactions, and examined six months of rental data for 22 buildings. Of the 114 units that rented, 39 had two or more bedrooms. Third, a number of buildings that are now apartments, including 1010 Wilshire, were permitted as condominiums, and a number of buildings offer both condos and apartments. We count all these buildings as rental units, thereby lowering the baseline comparison.

We should also mention that our average value for unbundled parking is probably an underestimate. Most of the buildings that offer unbundled parking sell space in existing

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<sup>17</sup> The Factory place Lofts had been progressively redeveloped. In these calculations we only count those buildings that used the ARO.

<sup>18</sup> Neither of these buildings added new parking spaces during the ARO conversion process.

structures or surface lots. But many residential parking spaces are subterranean. The costs of these underground spaces are likely to be higher, but because few of them are unbundled, our average cost is biased downward.

A final point is that while the developers we are examining are not regulated by the city with respect to parking, they are constrained by lenders. Thus their actions reflect not the judgment of the market but the judgment of lenders. Yet when it comes to parking, lenders operate in same knowledge vacuum as everyone else. Lenders know from experience, but their experience, like everyone else's, has been dictated by parking requirements.

In total, 16 of the ARO buildings—both condo and rental—provide no bundled parking spaces, and an additional nine buildings provide the first space with rent but charge residents for an additional space.

### **Differences between ARO and New Downtown Housing Units**

One possible objection to our approach is that we are comparing ARO developments to a fictional baseline—that no one actually complies with the zoning code. As a check on these results, we also collected data on ten non-ARO developments in the downtown that had been developed since 1999. These buildings provided an average of 1.7 spaces per unit, with a low of 1.2 and a high of 2.3. One of the low estimates was the Elleven building, which one of us helped have its parking requirements reduced during a time-consuming and costly variance request.

### **V. Conclusion**

Our results show that the Adaptive Reuse Ordinance has led to the revitalization of historically significant buildings and their neighborhoods, and that the parking exemption the ARO offered developers played a necessary, though not sufficient, role in this revitalization. Although our results are not definitive, they are strong enough for us to suggest that cities

reconsider parking requirements in their dense areas. For preservationists, an empty building is an endangered building, and for urbanists, a neighborhood of empty buildings is a neighborhood on the verge of--if not already in--decline. In dense inner city areas, a residential parking requirement places a needless tax on development.

For those not convinced by our argument, we offer a second suggestion. Our results would be more persuasive if data on parking spaces was more consistent and reliable. Yet today local governments everywhere require parking but fail to record it. Parking is an important enough aspect of land use to warrant a serious effort at data collection. Cities gather a wealth of information about land use and travel, but do not gather information on what is arguably the key link *between* land use and travel (and the one they regulate most heavily). Our understanding of how parking affects both land use and development will grow once we have better information.

## References

- Berton, Brad. 1996. Breathing New Life into Downtown Offices. *Los Angeles Business Journal*. July 22.
- Bula, Frances. 1999. Hobo Hotels make room for the homeless. *Toronto Star*. October 28.
- Cunningham, Christopher. 2006. *Journal of Urban Economics*. 50(1): 1-31
- DeParle, Jason. 1993. San Diego sees too much of success in building hotels to house the poor. *New York Times*. July 13, p. 14.
- \_\_\_\_\_. 1994. Build Single Room Occupancy Hotels. *Washington Monthly*. March.  
[http://findarticles.com/p/articles/mi\\_m1316/is\\_n3\\_v26/ai\\_14882984/](http://findarticles.com/p/articles/mi_m1316/is_n3_v26/ai_14882984/)
- Fixmer, Andy 2005a. LA's Downtown Renaissance resulting in parking shortage. *Los Angeles Business Journal*. January 31.
- Fixmer, Andy 2005. Who Owns Downtown? *Los Angeles Business Journal*. March 28.
- Gordon, Peter and Harry Richardson. 1998. Are Compact Cities a Desirable Planning Goal. *Journal of the American Planning Association*. 63(1):95-106.
- Jakle, Scully 2004. *Lots of Parking*. University of Virginia Press.
- King, Danny. 2001. Rehab Revival. *Los Angeles Business Journal*. December 17.
- Manville, Michael, and Donald Shoup. 2005. People, Parking and Cities. *Journal of Urban Planning and Development*.
- Newman, Peter and Jeffrey Kenworthy. 1999. *Sustainability and Cities*. Island Press.
- Reinhold, Robert. 1988. In San Diego, Developers Profit as Homeless Get low-cost housing. *New York Times*. September 6.
- Shiki, Kimiko. 2008. Why Do the Poor Move to Central Cities? *PhD Diss.*, UCLA Department of Urban Planning.
- Shoup, Donald. 2005. *The High Cost of Free Parking*. Chicago: Planner's Press.

