Off-street parking policy surprises in Asian cities

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ABSTRACT

This paper provides an international comparative perspective on non-residential, off-street parking policy in 14 large metropolitan areas in East, Southeast and South Asia. These are regions where parking challenges are widespread and acute. It utilises a new typology which groups parking policy approaches into 'conventional', 'parking management' and 'market-oriented' categories. Several distinct parking policy orientations are identified among the cities studied. Given their characteristics (most have relatively low car-ownership, high-density development and high usage of public transport) Asian cities might be expected to have off-street parking policies akin to those of many older areas in western cities. Yet, most of the Southeast and South Asian cities studied have parking policies that are surprisingly conventional and promoting of automobile-dependence. It is less surprising that a number of cities, mostly in East Asia, do not have such an auto-centric conventional approach. However, it is a surprise that their parking policies still involve minimum parking requirements and have generally not adopted the most common alternative to the conventional approach (parking management).

Introduction

This paper places the off-street, non-residential parking policies of Asian cities into an international perspective, drawing on the results of a wider study of many aspects of car parking policy in these cities (Barter, 2010b). Attention to parking policy in this region is important because parking has been neglected in the urban policy and transport policy literatures on non-western cities. This is despite parking policy having significant urban consequences and being increasingly debated in the west (Ison & Rye, 2006; Kaehny, 2008; Shoup & Pickrell, 1979). In particular, the suburban supply-focused approach to parking policy, with its emphasis on minimum parking requirements, has come under sustained criticism for wastefully shifting parking costs from car users to everyone in society and for contributing to car-dependence, among other problems (Litman, 2006; Shoup, 2005).

Furthermore, the parking situations in many Asian cities are already problematic, despite relatively modest motorisation, and there are reasons to expect parking to be a growing challenge. Rapid urbanisation in the region means that today's choices will shape a vast future stock of urban fabric. Rapid motorisation and its uncertain future pace make planning for parking difficult. High urban densities make parking space especially disruptive and give it a high opportunity cost.

Informed parking policy-making is hindered by an existing literature that is short on international comparisons. There are

limited exceptions in the grey literature (Booz Allen Hamilton, 2006; de Wit, 2006; Seoul Metropolitan Government, 2009). There are scattered studies of parking policies in various countries but they are not easily used to build a comparative perspective. There appear to be no comparative overviews of this topic for regions outside the Global North.

The focus here on off-street non-residential parking requires explanation. Off-street parking supply is widely believed to be a pre-requisite to solving on-street parking problems in commercial streets and centres of activity. Parking problems (or perceived problems) in such locations generally involve parking by employees, clients, customers and other visitors. Arguably, getting efficient on-street parking outcomes depends primarily on effective *on-street* parking management. However, this is difficult both practically and politically. Many jurisdictions therefore make *off-street* non-residential parking the main focus of their efforts to address on-street problems, making off-street parking policy a key feature of urban management in the most intensely-used, high-profile parts of most cities. Although on-street parking policy is generally beyond the scope of this paper, it often interacts with off-street parking policy and will need to be briefly mentioned in several places. Similarly, although residential parking policy cannot be completely divorced from other parking issues, it has its own distinctive complexities and could not be addressed in this paper.

The cities in the study are diverse (Table 1). Among them, car ownership and income levels vary widely. None of these Asian cities has western levels of car ownership (generally over 500 cars per 1000 residents). Ahmedabad, Beijing, Dhaka, Guangzhou and Hanoi are 'newly motorising' cities. They are discussed together when appropriate,

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Table 1
Key data on the cities in the study.

	Population (millions)	Car ownership (per 1000 persons)	Economy GDP/capita (PPP$ 2008)
Singapore	4.6	112 (2008)	50,456
Hong Kong	7.1	55 (2008)	43,954
Tokyo	35.2	335 (2008)	34,173
Taipei	6.3	253 (2008)	30,942
Seoul	19.9	227 (2005)	27,620
Kuala Lumpur	5.8	314 (estimate)	13,816
Bangkok	8.3	330 (estimate)	8216
Beijing	14.0	103 (2008)	5958
Guangzhou	13.2	84 (2008)	5958
Jakarta	22.0	203 (2006)	3975
Manila	20.8	82 (2007)	3507
Ahmedabad	5.4	55 (2007)	2923
Hanoi	2.4	18 (estimate)	2788
Dhaka	10.1	27 (2009)	1501

Sources are listed in Appendix A.

although car ownership in the Chinese cities has overtaken that of some longer motorising cities, such as Manila and Hong Kong.

A key aim of the paper is to provide a clear comparative perspective on the approaches to off-street non-residential parking in these Asian cities. This is achieved with the help of a conceptual framework which categorises parking policy approaches based on contrasting fundamental assumptions and objectives (see Conceptual Framework: Approaches to Parking Supply Policy). The results reveal surprises and significant policy implications.

Methods

Local field assistants and collaborators helped gather data in each city in the second half of 2009 (see Acknowledgements). More than 65 interviews were conducted. A wide range of documents were sought and consulted, including parking policy documents, academic studies, planning regulations, transport policies and studies, local area parking studies and news media reports on parking. Specific sources for comparisons of parking regulations in this paper are listed in Appendix B. Surveys of motorist parking behaviour were carried out in most of the cities. These inform some of the analysis here but are not reported on directly in this paper. Direct observations played a role in the study but we did no new parking inventories, occupancy surveys, turnover studies or measurements of cruising for parking. Systematic walking tours were used to examine parking in a diversity of locations across each city. The focus was not just on Central Business Districts (CBDs) but on parking across whole metropolitan areas.

Conceptual framework: approaches to parking supply policy

This section presents a typology of parking policy approaches (Table 2) that builds on previous work by the author (Barter, 2010a) and is based on the international literature on parking supply policy, including Asian examples. This study of Asian parking provided a test of the utility of this framework outside western contexts and prompted some refinements.

Much of the world's urban fabric is subject to the conventional approach in which minimum parking standards are the key tool, aiming to eliminate any risk of 'spillover' of parking from the premises (especially into the streets). Off-street parking is seen as an ancillary service for each site. One stream within this conventional approach is consistent with and promoting of automobile-dependence. It is used in suburban North America and Australasia where minimum parking requirements are estimated based on data from isolated buildings with no pricing of parking (Shoup, 1999). The typology terms this the 'auto-centric conventional' approach.

One alternative to the above approach falls within the 'conventional' category but is distinguished by its less automobile-dependent assumptions about the 'demand' for parking. This stream is called 'demand-realistic conventional parking policy'. It involves minimum parking requirements based on more realistic assessments of demand for each site in its actual context (Forinash, Millard-Ball, Dougherty, & Tumlin, 2003; Litman, 2006). This applies in some older parts of American and Australian cities and is widespread in Europe as well as in parts of Asia, as we will see.

The second broad approach can be called 'parking management', in which parking is viewed as part of the transport infrastructure for each locality and as a potential tool for wider transport policy and urban planning goals. Since transport policy and urban planning involve multiple objectives, parking management usually does too. These may include efficiency, reducing parking conflict, revenue, urban regeneration and mobility management (Marsden, 2006; McShane & Meyer, 1982). Ensuring 'adequate' supply may sometimes remain an objective to be achieved by various means but this will be just one of several goals.

Parking management is a broad school with considerable variation, depending on the relative priorities given to the objectives being pursued. Multi-objective parking management often accepts some risk of parking spillover and includes tools to minimise it, manage its impacts (including in the streets), and deal with any conflict (Litman, 2006). It has been increasing in sophistication and is credited with success in dense urban contexts and activity-centres in Europe (de Wit, 2006).

Parking management also has a second important sub-stream. This arises when traffic demand management becomes the overriding objective so that parking supply is actively constrained (Booz Allen Hamilton, 2006). Such 'constraint-focused parking management' has been applied in many city centres in the west.

Market-oriented parking thinking is the third broad approach. It is less familiar than the first two, although it has a long history (see for example, Roth, 1965). It has rarely been consciously applied via stated policy but, in practice, many city centres have functioning market-based parking arrangements. This policy stream has become prominent through the work of Donald Shoup (2005). He suggests an integrated set of parking reforms for American cities: (i) charge demand-responsive market-clearing prices for on-street parking (in order to defuse spillover as a problem); (ii) make this politically attractive by having the revenue managed locally and devoted to local civic improvements; and (iii) abolish planning requirements for off-street parking. Market-oriented thinking on parking does not require parking policy to explicitly serve other urban objectives. Instead it seeks to 'let prices do the planning'.

Both the parking management and the market-oriented streams of parking policy see parking demand as a vicinity-wide phenomenon not as something to be associated with specific buildings. They are suited to 'park-once' localities and may actively foster them.

The typology enables more clarity than usual on the alternatives to automobile-oriented conventional parking policy. It highlights that these alternatives are fundamentally different from each other, with contrasting assumptions about the objectives of parking policy and about the nature of parking problems. These approaches are so different that it is not surprising that participants in parking policy debates often seem to lack a common framework for thinking about parking, let alone common thinking on what should be done.

I now proceed to compare the various key elements of off-street parking policy in the Asian cities in the study. It might be expected, given that most of the Asian cities have high population densities, relatively low car ownership, and a high modal share by public transport, that many of them will have parking policies dominated by constraint-focused parking management. In the west, this is the