

**IN WHOSE INTEREST? A CRITICAL APPROACH TO  
SOUTHEAST ASIA'S URBAN TRANSPORT DYNAMICS**

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I declare that this thesis is my own account of my research and contains as its main content work which has not previously been submitted for a degree at any tertiary education institution.

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## ABSTRACT

During recent decades, urban transport systems in Southeast Asia's industrialising high growth economies were transformed. The ownership and use of privately-owned cars and motorcycles grew in all cities, simultaneous to the introduction of new forms of public transportation including rail rapid transit in the larger metropolises. While these cities all experienced dynamic change, the relative rate and direction of the changes to urban transport systems varied greatly as did levels of success. Singapore emerged as a highly efficient transit metropolis whilst Bangkok and other cities gained notoriety as some of the world's great traffic disasters. Why these differences emerged, particularly given a regional and global context of increasing interaction and exchange of ideas and of capital flows, presents a compelling question largely unanswered by previous research. A review of the general state of knowledge about urban transport worldwide reveals fundamental disagreements over basic questions such as the social value of motorisation, the relative merits of specific modes and technologies, and prescriptions for change. However, there is a general consensus that interest groups or rent-seekers influence urban transport, which can not be understood in solely technical or value-free terms. A literature review focused on Southeast Asian cities finds that in contrast to theoretical perspectives on cities of the industrialised world, there is less acknowledgement of interests and values and more emphasis on instrumental knowledge which can be used to address immediate problems such as rapid growth in motorisation, traffic congestion, and pollution. Questions such as who wins and who loses from changes to urban transport systems are not systematically examined in the existing literature on Southeast Asian cities. In order to address this gap, a case study analysis of three key cities, Bangkok, Kuala Lumpur, and Singapore is undertaken. This analysis utilises policy and planning documents, monographs and academic works, newspapers and archival materials, discussions with key informants, and participant observation, to reveal the significant actors and processes which shape urban transport. The study finds that the presence or absence of actors and complexions of interests in the development of urban land, urban transport equipment, infrastructure construction and operation, and local environmental improvements are linked to specific urban transport outcomes. The findings provide a basis for future research, particularly in cities of the developing world characterised by economic growth, rapid motorisation of urban transport systems, and substantial inequalities of wealth and power.



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## ABBREVIATIONS AND ACRONYMS

Asian Development Bank	ADB
Area Licensing Scheme	ALS
Area Traffic Control	ATC
Bangkok Expressway Company Limited	BECL
Bangkok International Banking Facility	BIBF
Bangkok Metropolitan Administration	BMA
Bangkok Traffic Management Program	BTMP
Bangkok Transit System Corporation	BTSC
Build-Operate-Transfer	BOT
Central Business District	CBD
Central Intelligence Agency	CIA
Central Provident Fund	CPF
Certificate of Entitlement	COE
Corporate Debt Restructuring Committee	CDRC
Crown Property Bureau	CPB
Dewan Bandaraya Kuala Lumpur (Kuala Lumpur City Hall)	DBKL
Economic Planning Unit	EPU
Electronic Road Pricing	ERP
Expressway and Rapid Transit Authority	ETA
General Motors	GM
Gross Domestic Product	GDP
Gross Regional Product	GRP
Heavy Industries Corporation of Malaysia	HICOM
Housing Development Board	HDB
International Monetary Fund	IMF
Industrial Estate Authority of Thailand	IEAT
Institute for Transport and Development Policy	ITDP
International Bank for Reconstruction and Development	IBRD
International Monetary Fund	IMF
Japan Bank for International Cooperation	JBIC
Japan International Cooperation Agency	JICA
Kampung Improvement Project	KIP
Kreditanstalt für Wiederaufbau	KfW
Keretapi Tanah Melayu Berhad (Malaysian National Railways)	KTMB
Kuala Lumpur City Centre	KLCC
Kuala Lumpur Second International Airport	KLIA
Land Transport Authority	LTA
Light Rail Transit	LRT
Mass Rapid Transit (Singapore)	MRT
Mass Rapid Transit Corporation (Singapore)	MRTC
Metropolitan Rapid Transit Authority (Bangkok)	MRTA

Multimedia Development Corporation	MDC
Multimedia Super-Corridor	MSC
Newly Industrialised Country	NIC
National Economic and Social Development Board	NESDB
National Housing Authority	NHA
New Economic Policy	NEP
North-South Expressway	NSE
Office of the Commission for the Management of Road Traffic	OCMRT
Overseas Development Assistance	ODA
Overseas Development Authority (UK)	ODA
Overseas Economic Cooperation Fund	OECF
People's Action Party	PAP
Perusahaan Otomobil Nasional	PROTON
Privy Purse Bureau	PPB
Projek Leburaya Raya Utara-Seletan Berhad	PLUS
Projek Usahasama Transit Ringan Automatik (LRT System II)	PUTRA
Ringgit (Malaysian currency)	RM
Singapore Improvement Trust	SIT
Singapore Mass Rapid Transit	SMRT
Sistem Transit Aliran Ringan Sdn Bhd (LRT System I)	STAR
State Railway of Thailand	SRT
Standing Advisory Committee on Trunk Road Assessment	SACTRA
United Engineers (Malaysia) Sdn Bhd	UEM
United Malays National Organisation	UMNO
United Nations Development Programme	UNDP
United Nations Environment Programme	UNEP
Urban Transport Planning	UTP
Vehicle Kilometres Travelled	VKT
Vehicle Quota System	VQS

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## **NOTES ON CURRENCIES, THAI TRANSLITERATION, AND NAMES**

Monetary figures cited in the thesis have been left in the local currencies, rather than converted into a common currency. During the regional economic crisis of 1997-8, all of the Southeast Asian currencies cited in this thesis lost substantial value in a short period of time, but have remained stable for the last few years. As a general reference, against the US dollar the pre-crisis, 1995 values of the Thai Baht, Malaysia Ringgit, and Singapore Dollar were 25 Baht, 2.5 Ringgit, and 1.4 Dollars. In 2002 the values were approximately 44 Baht, 3.8 Ringgit, and 1.8 Dollars.

I have attempted to use the most common transliterations of Thai names and places, rather than adhering to one of the formal transliteration schemes.

Thais and Malaysians are commonly identified by their first names, and I have therefore followed this practice in the text. However, I have not adhered to Thai referencing convention because I have listed Thai authors alphabetically by their last names in the bibliography. This was done in order to preserve consistency with the referencing of sources from Malaysia and Singapore.

- 1 -  
**INTRODUCTION**

**1.1 The evolution of urban transport**

For most of the world's history, movement in cities has been based on walking, riding animals, or paddling boats. A wealthy few have been passengers riding in carriages propelled by other people or animals. This reliance on humans and animals as the source of power for locomotion limited the extent of travel that could be accomplished in one day and shaped the built form of cities. The physical size of these walking or pedestrian cities was limited to under approximately five kilometres, population densities were high, activities were concentrated and mixed closely together, and streets were not just for movement, but also for many social activities (Newman and Kenworthy, 1999; Schaeffer and Sclar, 1975; Warner, 1962).

The late nineteenth century invention of electric trains and trams revolutionised urban transport. Electrical power generated elsewhere was transmitted to move carriages along fixed tracks which extended beyond walking distances. Massive investments in electric tramways in the US, Europe, and Western colonies played a part in the great European industrial boom at the very end of the nineteenth century (McKay, 1976). The changes were most dramatic in Germany and the USA where the major technological advances and innovations in harnessing electricity to power trains were made in the 1880s (McKay, 1976). Over a short period of time, mobility over much wider areas became available to large segments of urban populations, which began dispersing and moving further outwards toward the city's urban edge where the first suburbs appeared. This shift from walking cities to cities of streetcar suburbs is described in great detail by Warner (1962), who documents the "freeing" of Boston's pedestrian population from the traditional confines of the city. From a compact pedestrian city of about three kilometres diameter, Boston in the late nineteenth century became a city of about sixteen kilometres dominated by streetcar suburbs (Warner, 1962). This process was repeated in cities around the world, and the result was the emergence

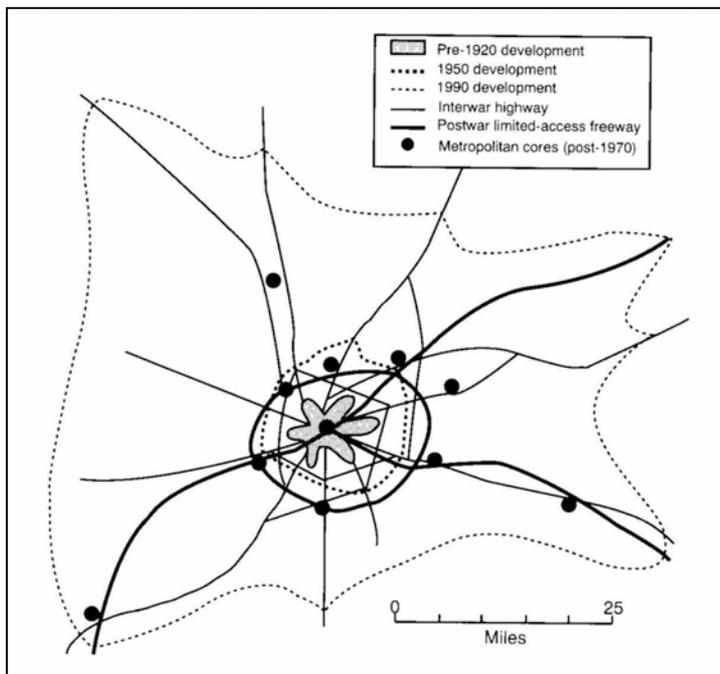
of “tracked cities” (Schaeffer and Sclar, 1975) or “transit cities” (Newman and Kenworthy, 1999).

While the technology used for tram-based urban transport was similar on both sides of the Atlantic, the way in which the technology was used and controlled differed. While private companies with commercial interests in technology, equipment, and real estate played a role everywhere, in Europe strict public regulation (for example, to require reduced fares for the working class) constrained private actors (McKay, 1976). Similarly, in Japan, the first municipally-owned and operated electric tram began operations in Osaka in 1903 under the support of the Mayor, who set out rules banning private rail operations in order to eliminate “the pursuit of selfish interests by profit-seeking companies and give utmost attention to the convenience and benefit of the public” (Aoki, 1993:80). In the US, however, there was a lack of public control and policy guiding the development of the extensive private rail systems, and the foundations were laid for the system to be dismantled once a more profitable alternative arose.

The next wave of urban transport change began in the twentieth century with the introduction of vehicles with on-board power provided by internal combustion engines. Changes accelerated in the mid-twentieth century when the mass production of affordable automobiles, motorcycles and buses was introduced. The foundations for private mass car manufacturing and use were laid in the 1920s, but the process accelerated after World War II and led to what has been called automobile suburbia (Muller, 1995), the automobile dependent city (Newman and Kenworthy, 1999), the rubber city (Schaeffer and Sclar, 1975), or the limitless city (Gillham, 2002). This process of urban transport motorisation transformed the form and size of cities and led to low density urban sprawl, mono-functional residential suburbs ringing central business districts, and the segregation of vehicles and the clearing of streets for the sole use of motor vehicles. The range of automobile-oriented urban densities tended to be one tenth of historically prevalent patterns as a result of speed of movement on the built environment (Pushkarev and Zupan, 1977).

The automobile city has reached the most complete state in North America and Australia. This transformation culminating in automobile dependent cities has been extensively studied and has been commonly conceptualised as having passed through a series of archetypal stages, each characterised by a dominant form of intra-urban transport and associated spatial form and organisation. Muller (1995) identifies four intra-metropolitan transport eras and associated growth patterns in the US: a walking-horsecar era (1800-1890), an electric streetcar era (1890-1920), a recreational automobile era (1920-1945), and a freeway era (1945-present). The automobile and freeway eras in the USA have been associated with the depopulation of inner city areas and continued growth on the outer edges of cities (Figure 1.1). The emergence in the USA of completely automobile dependent suburban downtowns referred to as “edge cities” has been the most recent phase in the continuing spatial evolution of cities (Garreau, 1991).

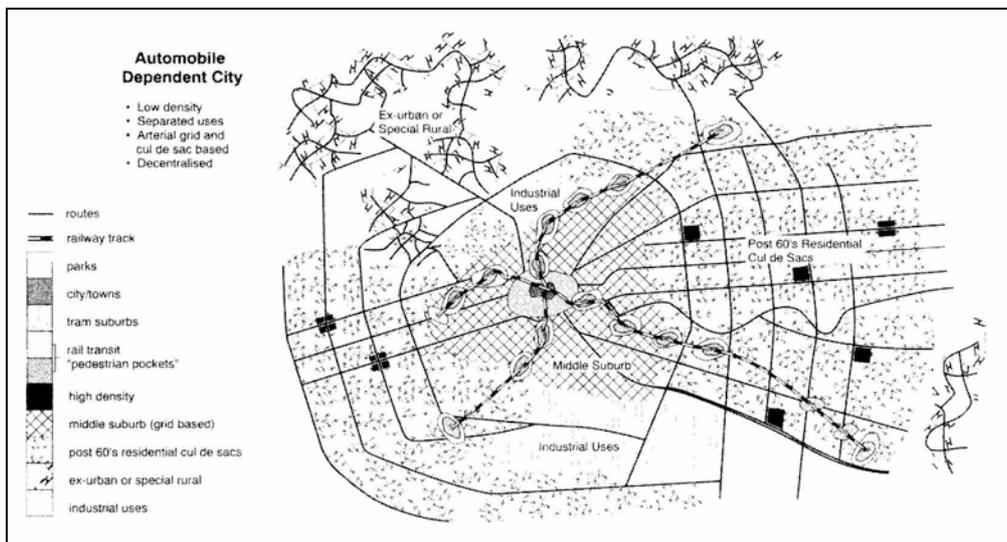
**Figure 1.1 The spatial pattern of growth in automobile suburbia since 1920**



Source: Muller (1995)

While Muller provides a spatial model for cities of the US, Newman and Kenworthy (1999) provide a generic model of late twentieth century automobile cities around the world. They classify cities as having passed through three stages: walking, transit, and automobile. Newman and Kenworthy argue that the new form of city is grafted on to the old, and in even the most automobile-dependent cities, remnants of the walking and transit past phases remain (Figure 1.2). By the late twentieth century, cities in industrialised nations had inner cores where walking and cycling still predominated, in addition to areas served by rail systems and surrounded by vast low-density areas served primarily by the privately-owned automobile.

**Figure 1.2 Automobile-dependent city**



Source: Newman and Kenworthy (1999)

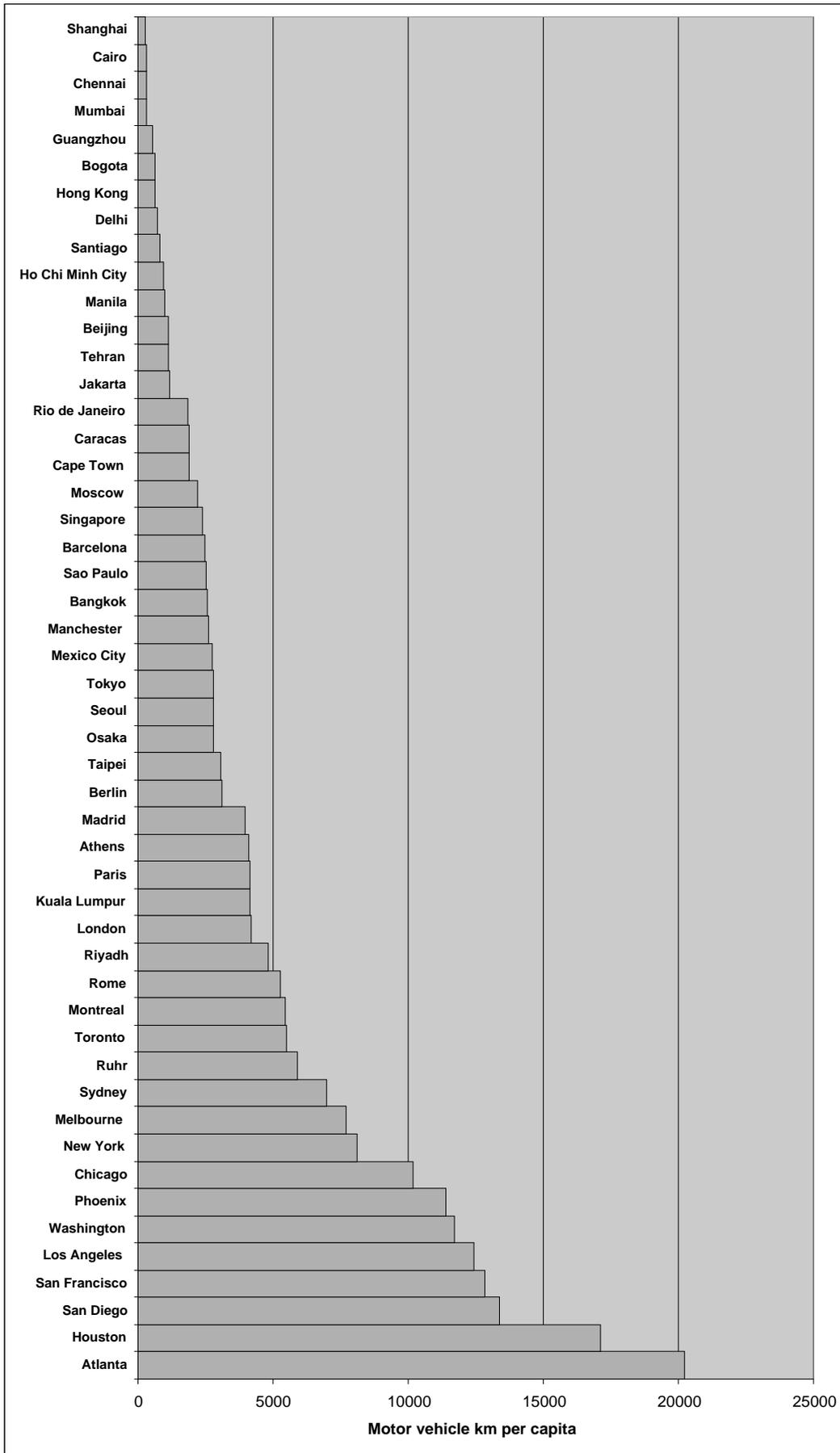
However, not all cities have gone through these stages to the same extent: the automobile cities are concentrated in the Anglo-American nations of North America and Australia. Most of the world's population lives in urban (and rural) areas of developing countries where cities remain based on walking. A large majority of the population inhabiting many of the world's cities, continues to depend on non-motorised modes of transport for most trips while a small minority inhabiting cities in highly industrialised nations use motorised vehicles for virtually all trips. The development of automobile dependent cities in North America and Australia has led to a profound global disparity in mobility (and

concomitant energy use). This disparity is also replicated within cities, where sections of the urban areas and social classes are associated with different forms of urban transport.

By the turn of the most recent century the world was divided into the mobility *haves* and mobility *have-nots*: the *hyper* mobile and the *hypo* mobile (Adams, 2001). Leading the hyper mobile were American cities such as Atlanta, Los Angeles, and Houston; leading the hypo mobile were numerous cities in the developing world where reliable statistics were lacking but where it was well-known that mobility was miniscule. Figure 1.3 indicates the level of mobility in cities for which reliable, standardised data were available, but excludes the most hypo mobile cities of the world. Hypo mobile cities in which reliable statistics were available gave some indication in the massive differences in vehicle kilometres travelled in motor vehicles. People in Atlanta travelled 144 times the distance annually as people in Dakar, Senegal (Kenworthy and Laube, 2001). In terms of vehicle kilometres per capita in cars, the difference between Atlanta and Ho Chi Minh City, where mopeds and two-stroke motorcycles have recently proliferated, is over 500 times (Ibid.). Likewise, Shanghai had an average of 78% of daily trips by non-motorised modes and only 7% by private motorised modes, whereas Atlanta had 3% of daily trips by non-motorised modes and 95% by private motorised modes (Ibid.). The data indicated that the most hyper mobile, automobile dependent cities were in the USA (Figure 1.3).

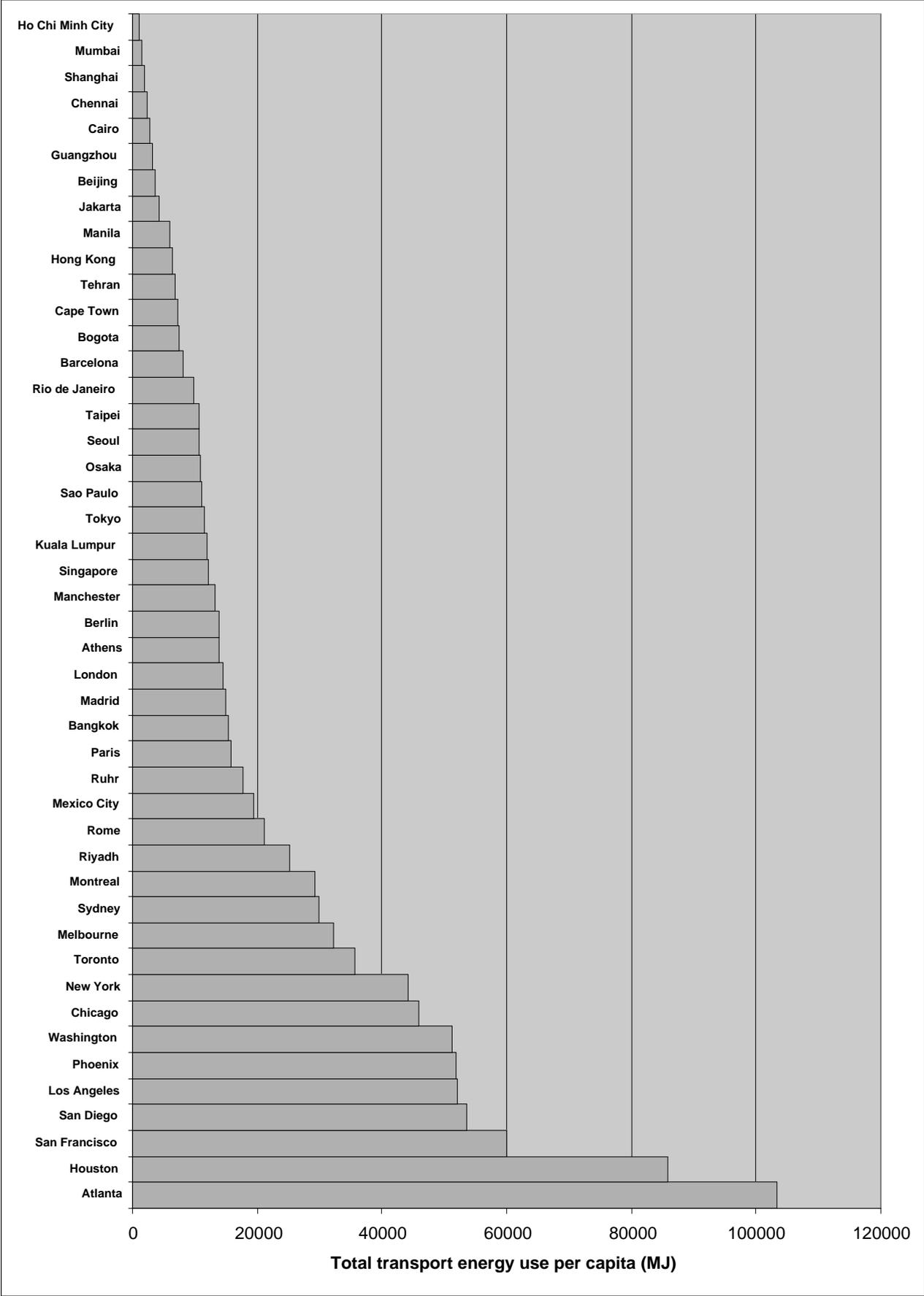
This has implications because the use of motor vehicles is closely associated with the overall use of energy for private passenger transportation in cities (Figure 1.4). The source for most of the transport energy in the US cities is cheap oil, much of it imported. The burning of that fuel and the manufacturing of those vehicles also have global consequences for the environments and societies.

**Figure 1.3 Mobility in cities of over 2.5 million inhabitants, 1995**



Data source: Kenworthy and Laube (2001)

**Figure 1.4 Transport energy in cities of over 2.5 million inhabitants, 1995**



Data source: Kenworthy and Laube (2001)

## **1.2 Cities and urban transport in Southeast Asia**

The rise of hyper mobile cities in North America and Australia (and to a lesser extent in Europe) has not been the only recent change to urban transport around the world. Another major change has been rapid motorisation of urban transport in large cities of the nations of the former Third World. Much of this change has occurred in Southeast Asia, which as a region experienced rapid urbanisation and industrialisation during the last quarter of the twentieth century. The Southeast Asian region comprises the nations of Brunei, Cambodia, East Timor (an independent nation-state since 2002), Indonesia, Laos, Malaysia, Myanmar (formerly Burma), the Philippines, Singapore, Thailand, and Vietnam.

Urbanisation has been extremely rapid and by the recent turn of the century the region had 10 cities of over 3 million inhabitants: Bandung, Bangkok, Ho Chi Minh City, Jakarta, Kuala Lumpur, Manila, Medan, Singapore, Surabaya, and Yangon (Rangoon) (Figure 1.5). Changes were particularly concentrated in the large cities of the growth economies of the Association of Southeast Asian Nations (Indonesia, Malaysia, Singapore, and Thailand).<sup>1</sup> This growth was the result of trade liberalisation and foreign direct investment in export-oriented manufacturing, and with the partial exception of the Philippines, the nations of the region experienced urbanisation and industrialisation.

In all of the Southeast Asian nations, urban areas were at the centre of the recent economic boom, which was punctuated by financial crises and economic recessions in the mid 1980s and the late 1990s. Industrialisation, investment, and wealth were mostly concentrated in the large capital cities of the region. While growth nationally was rapid, growth within cities was even faster: five of Southeast Asia's capitals became "world cities" (Beaverstock and Taylor, 1999).

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<sup>1</sup> The socialist and communist nations of Southeast Asia (Cambodia, Laos, Myanmar, and Vietnam) which previously had centrally-planned command economies in the 1990s undertook varying degrees of free market reforms and began to experience processes of more rapid industrialisation and urbanisation. Development in these cities (including the relatively large and dynamic cities of Hanoi, Ho Chi Minh City, Phnom Penh, and Yangon) in some ways resembled that of the newly industrialised and emerging market economies.

Simultaneously, they became showcases of global modernity and expressions of national self-consciousness, and subjects of articulation of globalisation, national integration and localisation (Evers and Korff, 2000). By the 1990s, Southeast Asia's urban system was dominated (in terms of population size) by three "mega-cities", Bangkok, Jakarta, and Manila, each with over 10 million inhabitants (Figure 1.5).<sup>2</sup> These mega-urban regions dwarfed the next largest, secondary cities in each of the nations, particularly in Thailand where Bangkok was approximately 20 times larger than the next largest city. In terms of population, the next largest capitals were Kuala Lumpur at the centre of an urban region of over 3 million inhabitants and the island city-state Singapore, with approximately 3 million inhabitants adjacent to the city of Johor Bahru in Malaysia. In all of the cities of Southeast Asia, the functional urban areas or urban regions extended beyond municipal, or in the case of Singapore, national boundaries of governments.

Change to urban transport, and particularly the growth of motorisation, was rapid in these five large cities. Shifts in the types and frequency of the trips people made on a daily basis changed. In relative and absolute terms, widely-used modes of transport including private cars and motorcycles, mass rail transit, non-motorised modes including walking, public buses, and "informal sector" motorised and non-motorised modes, all changed to a large extent in Southeast Asia's metropolitan areas. Motorisation was rapid in most cases, but was particularly fast in Bangkok and Kuala Lumpur. Related to these modal shifts, the places people lived, worked, and relaxed also changed and this influenced the distances and frequencies of urban travel. In terms of scale and impact, the greatest change was the large increase in ownership and use of privately-owned motor cars and motorcycles.

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<sup>2</sup> Hong Kong (since 1997 a Special Administrative Region of the People's Republic of China) and the wider Pearl River delta region, which includes Guangzhou, also forms a mega-city. China's southern urban agglomeration, as well as Kunming, are mentioned in the dissertation, although they are most commonly analysed as part of China rather than of Southeast Asia.

**Figure 1.5 Southeast Asia's million-plus inhabitant cities**



- Capital city      •      1-2.9 million
- Non-capital city      ◦
- Capital city      ●      3.0-7.9 million
- Non-capital city      ○
- Mega-city      ●      8.0 million +

Population figures from [www.world-gazetteer.com](http://www.world-gazetteer.com), accessed 26 November 2002

Notwithstanding a decline in Singapore in the late 1970s and declines in most of the region's cities in the years following the regional economic crisis of 1997-98, the increased use of private motor vehicles was incessant over the last three decades in all of the cities.<sup>3</sup> In some ways the process of change in Southeast Asia differed from that experienced by the more automobile-oriented cities of the industrialised capitalist nations. Those cities evolved from walking cities into transit cities with extensive fixed track mass transit systems before becoming automobile dependent cities (Kenworthy and Townsend, forthcoming). However, in Southeast Asia, rapid industrialisation and large scale urbanisation occurred after streetcar systems had ceased operating.

Just as in the cities of the highly industrialised world, Southeast Asian cities have become more socially stratified and increasingly heterogeneous in terms of transport and land use. Similarly, private motor vehicles have posed challenges for the environmental, economic, and social sustainability of Southeast Asian cities. While providing individuals with means of higher speed movement and access to destinations over a wider area, motorisation has had many negative impacts on collective life in cities in the Southeast Asian region. In these large and densely-inhabited cities, the growth in use of vehicles with internal combustion engines burning fossil fuels has resulted in negative environmental impacts including air and noise pollution, which have been spatially concentrated and acute. In these dense cities, high levels of motorised traffic per unit of urbanised land area (and associated environmental impacts) have emerged, even though vehicle use per capita has remained low in international comparative perspective (Barter, 1999). Also, vehicles have emitted comparatively higher levels of pollutants per kilometre of travel because vehicle and fuel qualities have been low and out-dated, and have been unconstrained by strict emissions standards. Global impacts have included greenhouse gas emissions and the depletion of non-renewable fossil

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<sup>3</sup> Singapore is the only Southeast Asian city with strict standards requiring up-to-date registration of cars, and the numbers fell in absolute terms between 1997-1998 and 1999-2002 as car owners de-registered vehicles due to economic recession and wage cutbacks. In the other capitals, and Bangkok in particular, there were reports of tens of thousands of vehicles, including taxi sedans, being taken off the streets and many parking lots were turned into used car sale lots.

fuel resources, with enormous respiratory and other health consequences. Given the sheer size of Southeast Asia's population, which has grown to comprise half a billion people or one twelfth of humanity, and the rate of urbanisation and other demographic characteristics, motorisation in these cities has become a global environmental concern. At the local level, in the absence of adequate regulation of motorised movement and training of drivers, motor vehicles have been associated with high rates of injury and death in some cities. In a global perspective, the accident fatality rates for Southeast Asia have been high given the relatively low overall levels of motor vehicle ownership and use (Kenworthy and Laube, 1999). Much of the growth in private motor vehicle use displaced non-motorised modes and buses.

The rise in cars and motorcycles was not the only change. Rapid motorisation was paralleled by a renaissance of rail development in some of the region's cities, most significantly in Singapore and Kuala Lumpur. Electric trams on city streets, as well as some inter city railways, provided fixed track urban transport in the majority of Southeast Asian cities throughout much of the twentieth century.<sup>4</sup> However, the electric tram systems which operated on major streets were dismantled in the 1950s and 1960s and were replaced by buses and cars.<sup>5</sup> These trams, or streetcars, along with a range of human and animal-powered vehicles, were cleared from city streets to make room for the higher-speed and space consuming motor vehicles and to reduce collisions between fast and slow moving vehicles. Not long after this, new forms of rail mass transit were proposed and planned for cities throughout Southeast Asia. By the mid-1970s, there were numerous plans and official commitments for the introduction of new forms of fixed track mass transit in every large city in Southeast Asia. The 1984 opening of

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<sup>4</sup> The first electric tramways in Southeast Asia began as private operations (with substantial European and American participation) first in Bangkok (1893), followed by Jakarta (1899), Hanoi (1901), Mandalay (1904), Manila (1905), Rangoon (1906), Singapore (1905), Penang (1906), Saigon (1923), Surabaya (1923), and Lop Buri, Thailand (1955). The last operating line, in Bangkok, ceased operations in 1968. Among what are now the large capital cities of Southeast Asia nations, Kuala Lumpur was an exception with no trams. Source: "A Survey of Tramways in Colonial Asia" <http://members.aol.com/trolleyana/tvs.html> accessed 9 December 2002.

an elevated light rail line in Manila marked the beginning of a new phase of Southeast Asia's urban transport development. The first "re-introduction" of electric rail services following the opening of the Manila system was in Jakarta (grade separated commuter rail began operations in 1986), Singapore (elevated and underground heavy rail system began operations in 1987), Kuala Lumpur (commuter rail services began operations in 1992), and Bangkok (elevated heavy rail system began operations in 1999). However, with the exception of Singapore, the per capita provision of fixed track public transport was low in Bangkok, Jakarta, and Manila, and was low (until the late 1990s) in Kuala Lumpur. These new fixed track transport systems moved large numbers of people in corridors with less space than motor vehicles and contributed less to urban air pollution. In spite of the growth of private motor vehicles and concomitant suburbanisation of homes and workplaces, these cities remained relatively dense and mixed use in character and well-suited to mass and non-motorised modes of transport.

### **1.3 Success and failure in Southeast Asia**

The processes of change to urban transport systems and urban form in Southeast Asia differed greatly between cities. A pattern of uneven development characterising urban transport globally also emerged in the Southeast Asian region, both within and between cities. These differences were apparent in the relative successes and failures of different cities. While all of the cities shared some changes such as growth in motor vehicles and some reintroduction of rail, the types of collective actions that were undertaken varied significantly. The principal difference in Southeast Asia was between the city-state of Singapore and the rest of the capitals of the region's growth economies. In particular, Singapore stood out as having an efficient system that supported a highly productive and growing economy with minimal negative impacts. This success was linked to the Singapore government's actions taken to slow growth in motor vehicle ownership and use and promote high quality public transport, while incomes and GDP rose

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<sup>5</sup> While trams/streetcars were dismantled, inter-city rail services continued operations, generally by state owned national railways, and served as de facto commuter rail services for movement within the large cities including Bangkok, Kuala Lumpur, Manila, and Jakarta.

rapidly. As a result, problems such as air pollution, noise pollution, and traffic congestion were by the 1980s considerably less in Singapore than in all the other Southeast Asian capitals. While most of the cities were similar in the early 1970s, by the early 1990s Singapore had been transformed into a modern “transit metropolis” (Cervero, 1998).

In contrast, the other capitals (Bangkok, Jakarta, Kuala Lumpur, and Manila) were beset by problems which were familiar to many large cities in developed and developing nations. Beginning in the 1980s, Bangkok attracted worldwide notoriety as a “traffic disaster” where growth in automobile and motorcycle use was out of control and causing major problems, at the same time as public transport deteriorated (Pendakur, 1993; Poboorn, 1997). Although Manila was the site of the first new electric rail system in the Southeast Asian region and where car and motorcycle ownership was lower than in the other Southeast Asian capitals, the usage of public transport declined in the 1980s and 1990s (Villoria, 1996). In all of the cities, some forms of non motorised transport were prohibited because they impeded the fast flow of motor vehicles on roads. Pedicabs were banned from the central areas of Bangkok and moved to outlying suburban and peri-urban districts, while in Jakarta *becaks* (non-motorised, passenger-carrying tricycles) were confiscated and unceremoniously dumped into the ocean (Cervero, 2000). However, in Singapore new infrastructure for pedestrians and cyclists was developed in conjunction with public housing estates and train stations.

Somewhat paradoxically, this differentiation of urban transport systems occurred during a period in which the cities became more internationalised and integrated into the global economy. In addition, it was during this period that many of the same external actors and institutions played a role in all of the cities of the region. While global processes were at work and all of the cities experienced booms, slowdowns, busts, and recoveries at similar times, it is clear that the character and extent of changes in urban transport systems were very complex. The fact that there has been such a divergent set of outcomes in urban transport in the Southeast Asian cities over just a few decades, during which time similar external or global

forces have been at work, raises the question of what lies behind these different outcomes.

#### **1.4 Research objectives and questions**

The central objective of the research is to enhance understanding of the recent urban transport changes in the large capital cities of Southeast Asia's growing economies. More specifically, an objective is to explain differences in urban transport systems in Southeast Asian cities. If through the research in this thesis some more general understanding can be achieved of the processes of transport change in Southeast Asian cities, this might have practical implications for improving the actions which shape urban transport systems in the Southeast Asian region. In pursuit of these overarching objectives which provide a rationale for the research, a series of questions serve to guide the research. These questions are:

1. Why does urban transport change?
2. How have changes to urban transport in Southeast Asian cities been theorised?
3. Is there a theoretical approach which can explain changes within, and differences between, Southeast Asian cities?
4. Why have urban transport outcomes varied so widely in Southeast Asia?
5. What are the implications of the findings?

#### **1.5 Methodological overview**

The broad approach to the research is interdisciplinary social science. Extensive literature reviews examine a mix of qualitative and quantitative materials, including an array of policy and planning documents. While the theory and practice of city and transportation planning are important components of the dissertation, this is not a prescriptive work. The research does not concern itself with the content, in and of itself, of extensive work on plans, policies, and institutions that have typically received a large amount of attention already. Nor does it seek to provide new policy and planning recommendations. Instead, this

research concerns itself with why the actual experience in urban transport and related planning matters have deviated so much from the idealised and prescribed processes and goals of the institutions involved. Rather than looking for new prescriptions about how urban transport could be improved, the research aims to probe questions about why prescribed actions and plans which often embody sound planning and technical advice were often not followed.

Case studies, focusing in particular on collective actions shaping changes, are used to explore the research questions. In order to limit the research to a manageable scale, case studies are undertaken of three key Southeast Asian capital cities: Bangkok, Kuala Lumpur, and Singapore. The case studies of three very different cities are used to unravel events which led to the urban transport situation evident today. A separate chapter describes the methodology and methodological issues surrounding these case studies.

## **1.6 Thesis structure**

In seeking to address the principal objective of theorising the increasingly heterogeneous processes and outcomes in urban transport, a general literature review is undertaken. Chapter 2 (“The Changing State of Knowledge About Urban Transport”) reviews worldwide theoretical discourses about urban transport, drawing mainly on the disciplines of transport economics, city planning, and urban transport planning. It provides a wide ranging theoretical discussion of how and why urban transport systems change. The results of this review provide the necessary theoretical understanding to begin to provide answers to the research questions.

Following this overview, Chapter 3 (“Perspectives on the Dynamics of Urban Transport in Southeast Asia”) reviews more targeted theoretical knowledge specifically about urban transport in Southeast Asia. This chapter seeks to examine where Southeast Asian cities are positioned within the larger theoretical discourses about urban transport, and how an explanation of observed changes might begin to take shape.

Chapter 4 (“Case Studies of Urban Transport in Southeast Asia: Methodology”) describes the selection and the approach to researching and writing case studies on three cities representing widely differing outcomes within the Southeast Asian region. Case study research is used as a method of revealing the stories and context in specific cities, as well as being standardised enough for comparative purposes.

Chapter 5 (“Bangkok: Order Amidst Chaos in ‘Detroit of the East’”) describes a complex set of collective actions which were often not coordinated and which were fundamentally changing character over time in a representative of one of Southeast Asia’s megacities of over 8 million inhabitants. The situation in Bangkok is common throughout the developing world and is indicative of the problems mobilising effective collective actions in these societies.

Chapter 6 (“Kuala Lumpur: Racing to Motorise and Industrialise”) describes the situation in a rather anomalous Southeast Asian metropolis which has emerged rapidly from an inauspicious beginning as a small resource town to an emerging global city. The collective actions in Kuala Lumpur were relatively coordinated, although the urban transport system that has resulted is a source of dissatisfaction to many inhabitants.

Chapter 7 (“Singapore: Speed, Success and Control in the PAP-State”) describes a highly coordinated set of actions controlled by an effective one-party authoritarian state. Singapore has been held up around the world as a model of urban transport efficiency.

Chapter 8 (“Complexions of Interests and Urban Transport in Three Cities”) analyses the case studies on the basis of the dominant interests associated with actions and actors in each of the cities. It synthesises the results of the analysis to answer Question 4.

Chapter 9 (“Conclusions and Implications”) concludes the thesis with a summary of answers to the research questions, which acts as both a summary of the dissertation, as well as a mandate for further research. Up until this point the dissertation is concerned mainly with the past; it ends by looking to the future. The chapter comes to a resolution on the direction studies of urban transport should follow in the future, when the long-term sustainability of cities will increasingly be a concern.

## THE CHANGING STATE OF KNOWLEDGE ABOUT URBAN TRANSPORT

### 2.1 Introduction

The state of theoretical knowledge about urban transport underwent fundamental changes during the twentieth century. In the middle of that century, an authoritative and cohesive body of theory was developed in the USA and was disseminated throughout the world. Much of this knowledge was utilised to explain emerging processes of change and it was highly normative: seeking not just to explain “what is”, but also to influence “what should be”. Knowledgeable experts or technocrats such as city planners sought to define problems and solutions which would be in line with agreed goals comprising the “public interest”, or the interest of the community as a whole. The technocrats sought to curtail the influence of self-interested individual capitalists and private landowners in order to create cities in which a public interest was furthered (Fishman, 1977). At this time, the consensus was that nation-states and technicians such as planners working in service to the state would constrain the actions of self interest and private interest (Friedmann, 1987).

As with other forms of modernist knowledge, it was viewed as rational and valid because it was instrumental and technical: it sought to provide the most efficient means of reaching a chosen end. These instrumental approaches deferred from specifying ends or utilities which from this view point could not be evaluated as rational or irrational, as better or worse: ends were just chosen, and one was as good as another (Harper and Stein, 1995). However, it was generally assumed that the role of expert knowledge about urban transport should be to facilitate the growth in private motor vehicle use and suburban, low-density communities. These were ends assumed to be in the public interest, at that time, especially in the USA where the transport knowledge was being developed.

This literature review focuses first on addressing the question, why motorisation increases more rapidly and reaches much higher levels in some places while public transport increases in others. It begins by reviewing approaches which are largely favourable toward motorisation. Many of the ideas come from transport economics which seeks to explain why motor vehicles and lower density housing increase with wealth. It also discusses Urban Transport Planning, a quantitative and rigorous methodology which essentially accepts and provides for increased motorisation. Transport economics and urban transport planning have clear ideas and prescriptions about the actions that should be taken by governments and see certain types of interference as the work of “special interests” or “rent seekers”.

This chapter then shifts to an overview of criticisms of motorisation and transport economics and urban transport planning approaches which became implicated in furthering motorisation. Beginning in the early 1960s, the value of urban transport motorisation and suburbanisation were questioned by critics who argued that the interests of the wider society were not furthered by these processes. These critics cast aspersions on the claims and the authority of those who were offering “objective” or “disinterested” explanations of motorisation. Their criticisms were linked to wider critiques and rejection of modernist forms of expert or technocratic knowledge.

The initial critics of motorisation and suburbanisation argued in particular on behalf of interests of inner city communities, the poor, and women. These groups did not have easy access to the use of motor vehicles, and as a result major public expenditures on roads and other infrastructure designed for private motor vehicles were of limited utility to them. The inner city communities were becoming displaced and fragmented by the road infrastructure being built for fast motor vehicle movement, while at the same time suffering disproportionately from the concentration of air pollution produced by motor vehicles. These criticisms gained ground in the 1970s when oil crises and growing urban air pollution led to further questioning of the benefits of motorisation and suburbanisation. The notion of a public interest which was central to the earlier knowledge was further questioned

as concern about the interests of future generations, voiced through the discourse of “sustainable development”, mounted in the 1980s and 1990s. The identification of corporate interests in profits through automotive and road-building industries became an important component of these critiques.

Changes to how urban transport is theorised have more recently paralleled the “postmodern turn” in the social sciences, including city planning and urban geography (e.g. see Harvey, 1989 and Dear, 2000). The current state of knowledge about urban transport resembles much of the social sciences. Where there was once a relatively well-defined body of knowledge, there are now multiple accounts and less is agreed upon. The authority and foundations of modernist city planning theory and practice have been undermined, and it is now argued that there are multiple public interests which cannot be revealed by technocrats or experts (Sandercock, 1998). It is now generally accepted that how technological changes to transport and associated environmental problems are conceptualised or “constructed” leads to the framing of different problems and solutions. The current state of knowledge about urban transport is characterised as fragmented in the chapter’s conclusions.

## **2.2 Pro-motorisation theories**

Much of the theorising which is favourable towards urban transport motorisation is carried out within the discipline of economics. According to mainstream transport economics, technological changes to urban transport are inevitable and rational outcomes of a universal, linear process. While these changes are observed in the cities of the USA and other Western, industrialised nations, they will also occur in developing nations which have free market, capitalist economies:

The urban transport systems of developing countries ... shift, as incomes grow, to higher-quality and more costly transportation modes. In the poorest cities the shift is from foot-powered modes to motorized public transport, while in the cities of the wealthier developing countries, citizens move from public transport to the private automobile (Gómez-Ibáñez and Meyer, 1993:13).

Quantitative analysis of aggregate changes in urban transport characteristics over time within and between cities are used as evidence to support this interpretation. These analyses show, for example, that rates of ownership of motorised vehicles and vehicle fleets rise with income. Recent statistical analysis of data from an international sample of large cities by Ingram and Liu (1999) suggests a strong positive correlation between per capita income and the level of motorisation. The mechanism explaining this is the action of individual, sovereign consumers making choices in a free market economy.

In addition to decisions to purchase motor vehicles, individual consumers make daily travel decisions which in aggregate shape the urban transport system: whether to travel or not, where to travel, and how to travel (and decisions about residence and work locations). Traditional consumer behaviour theory from microeconomics assumes that the sovereign consumer maximises his utility to the constraint of monetary budget, although more recently this has been expanded by some to include time budgets. Others argue that income growth raises the value of time, shifting demand from slower, cheaper modes of transportation to faster, costlier modes, such as the automobile. Consumers choose to use the automobile because of its relative attractiveness in terms of comfort, convenience, frequency of service, speed, reliability and accessibility of the service compared to other modes such as mass public transport. Analysis of consumer behaviour and certain characteristics of trip-making are interpreted to confirm that the automobile is a superior consumer good. One of the primary benefits of automobiles, according to these accounts, is its door-to-door travel time:

The car is the choice for so many travelers, not because people are “in love with it”; not because it assigns status to its owners, although this happens; not because it is comfortable, private and pretty; but because the car, like the telephone, permits random access. When origins and destinations are as scattered as they are in the newer and low-density cities of the United States, there is no other mode of transport that approximates the direct door-to-door capability of the motor car (Webber, 1981:111).

According to transport economics, in choosing private automobiles over public transport, consumers have revealed the inferiority of the latter.<sup>6</sup> Thus, as incomes rise and purchasing power increases, consumers will leave transit. According to Lave (1985), in the United States:

The villain responsible for the long-term decline in transit patronage is easy to identify: the increase in per capita income. Higher incomes gave people more freedom of choice and greater ability to do the things they wanted to do. Unfortunately, the things they chose were inimical to mass transit. Higher incomes permitted people to implement their strong desire to get out of cities and live in single-family, detached homes, resulting in the suburbanisation of America. Higher incomes permitted people to implement their taste for higher quality transportation and buy automobiles (Lave, 1985:3).

The major expression of benefits of roads and high speed travel is in terms of time savings, which makes it possible for free individuals to exercise consumer choices in their types of housing.

The automobile has made it technically feasible for people to live in dispersed residential locations, while rising personal incomes and mass production have made such a development economically possible. The desire, particularly among younger Americans, for single-family dwellings with attached play-yards and lawns historically seems to have been both overwhelming and undeniable, at least as long as per capita incomes continued to rise. The consequence has been what some observers have called ‘urban sprawl,’ .... In economic parlance, automobiles and suburban living space appear to be complementary superior goods (that is, consumption of one increases with increases in the consumption of the other and consumption of both goes up when per capita income increases) (Meyer, Kain, and Wohl, 1965:12).

As the preceding quotes suggest, much of the evidence in support of transport economics arguments is the experience in the United States where public transport has declined while private transport increased over the twentieth century (Figure 2.1).<sup>7</sup> As Meyer (1985:xx) states, “The public to private transition has, of course, been completed in the most developed countries--and most assuredly in the United

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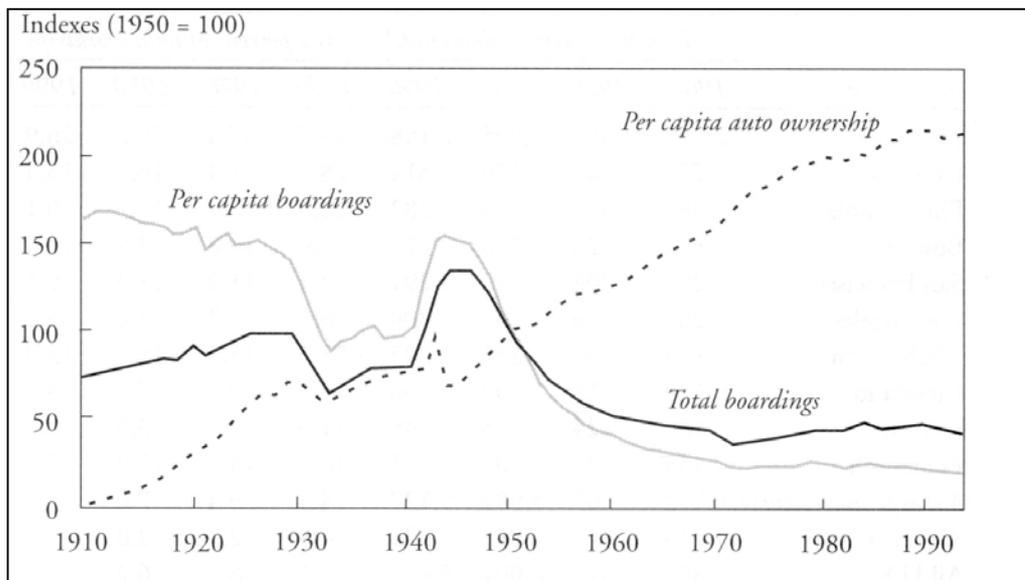
<sup>6</sup> Webber argues that the way to make public transport more competitive is to make it more like cars, while the way to reduce some undesired features of cars is to make cars more like public transport.

<sup>7</sup> Between 1995 and 2000, during an economic boom, public transport use in US cities underwent a “renaissance” and rose (Pucher, 2002).

States--and is in process in many developing countries as well.” At the apex of this shift is a transport system based on privately-owned, motorised modes of transport, which connect residential neighbourhoods comprised of low density single family homes and green surroundings, industrial areas, and central and suburban business districts.

An often-cited physical manifestation of this process of change is the Los Angeles metropolitan region, where the physical and social consequences of much of what is prescribed within transport economics are writ large. In 1963, Webber advocated sprawling and automobile dependent Los Angeles as “the best prototype available” for urban growth. Over thirty years later he argued that “[e]very major metropolitan region in the world is building low-density suburbs at its edge, .... Even those that were founded long before automobiles and telephones arrived – even Paris, London, Tokyo, Sao Paulo, and Holland’s Randstaad – are being remodelled to resemble Los Angeles” (Webber, 1996). Similarly, in a work on suburban “edge cities,” journalist Garreau (1991) argued with a triumphant tone that all growing cities in the world are growing to become more like Los Angeles.

**Figure 2.1 Per capita and total public transport boardings per urban resident and automobile ownership, USA**



Source: Kain (1999)

Implicit in these accounts is a concept of linear technological change which is in the public interest, and which is inevitable and value free. A proponent of “community without propinquity” and Los Angeles as the best prototype available, states that:

The auto-highway system stands as the best transport mode yet invented; there are now more licensed drivers in America than there are cars; and impending improvements promise even greater ease and speed of movement and greater accessibility as well .... [C]ars ... reflect the culmination of an historically long series of cumulating technologic improvements, all of them one-directional in their effects – all working to reduce the costs of overcoming geographic space and making for ever-greater locational freedom (Webber: 1996:3).

Notwithstanding claims to providing explanations of value-neutral technological change, these interpretations exhibit strong preferences for suburban living and private motor vehicles. In turn, these normative preferences form the basis for recommending public policies and planning, which it is argued, will lead to increased wealth and prosperity in the future.

### **2.2.1 Urban Transport Planning (UTP)**

As outlined in the previous section, economics of consumer behaviour provided a theory of how and why the ownership of motor vehicles increased with income growth. Implicit in this theory was the assumption that governments should create the conditions under which individual consumers could most efficiently fulfil their interest in owning and operating motor vehicles. Policies to accommodate motorisation, suburbanisation, and decentralisation were seen as “value-free” because these were what consumer choices indicated. The inevitability of motorisation was taken to be an indication that governments should attempt to “get the prices right” and promote free-markets and competitive firms to increase supply of transport infrastructure and services to meet the demand for motorised mobility. In order to achieve this, governments were expected to facilitate the configuration or physical layout of cities for automobiles. First and perhaps foremost, this required a substantial network of road infrastructure, including parking space required for these vehicles to be easily used in urban areas. The link between wealth and motorisation was incorporated into models and used to show

decision-makers that the process is inevitable or “irresistible” and that more roads must be built in order to accommodate free-flowing traffic (Lave, 1992). Rapid growth in motorisation and the infrastructure required to support it coincided, in Western cities, with the emergence of a modernist urban infrastructure ideal which was for comprehensive public infrastructure, paid for with public funds. It was during this period that a model for technical means of shaping transport and land use to accommodate large numbers of motor vehicles emerged.<sup>8</sup>

Early in the twentieth century, prior to the mass production of automobiles, initial ideas about how to accommodate motor vehicles in cities were proposed by architects and planners in the nascent modernist movement. Swiss architect Le Corbusier,<sup>9</sup> who is viewed by many as the greatest architect of the twentieth century, was a key source of ideas (Jencks, 1973). In *The City of To-morrow and its Planning* (1929), Le Corbusier envisioned a “City in the Park” comprised of high rise buildings set in green surroundings, and a movement pattern which was summed up with the slogan “a city built for speed is built for success”. He argued that in order for motor vehicles to move quickly it would be necessary to segregate pedestrians and slow moving vehicles from motor vehicles, which should also be separated based on the speed of the traffic. The overall strategies behind the “City in the Park” were functional segregation, decongestion and demolition of existing city centres, increased residential densities utilising highly-functional high-rise forms, increased circulation and high speed movement, and the creation of more open, green space. Le Corbusier’s most complete exposition of his vision of his utopian city was in *The Radiant City (La ville radiieuse)* published in 1933 (Scott, 1998). In Le Corbusier’s view, achievement of the “City in the Park” or the “Radiant City” would require hierarchy, authoritarian measures, and a technocracy:

Technocracy, in this instance, is the belief that the human problem of urban design has a unique solution, which an expert can discover and execute. Deciding such technical matters by politics and bargaining

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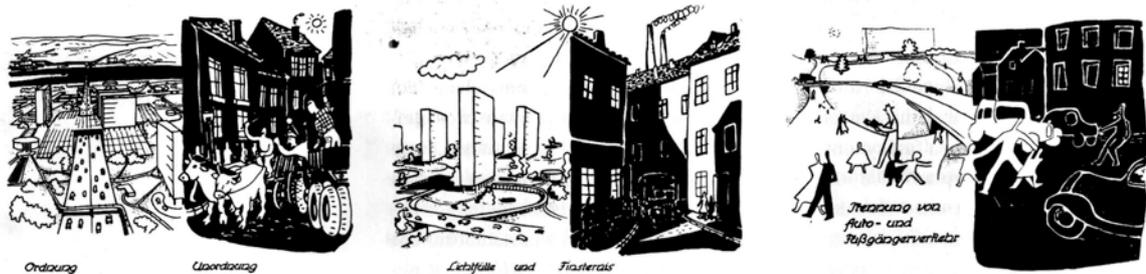
<sup>8</sup> Prior to this period, transport planning involved extrapolating traffic growth figures and providing for future traffic flows in an ad hoc fashion.

<sup>9</sup> “Le Corbusier” was the chosen pseudonym of Charles-Eduard Jeanneret, born 1887 in Switzerland, died 1965.

would lead to the wrong solution. As there is a single, true answer to the problem of planning the modern city, no compromises are possible (Scott, 1998:113).

Le Corbusier and his colleagues and contemporaries drew up plans for a number of cities which could be remodeled to accommodate a fully motorised urban circulation system which would link the concentrations of functionally separated activities. The principles emphasised the order of traffic separation, compared with the disorder of the traditional street with animal-drawn vehicles and other mixed and slow moving modes of transport (Figure 2.2). In addition, the spread out high-rises would provide an abundance of light and space where the narrow traditional street was dark.

**Figure 2.2 Modernist principles of transport: good and bad practices**



Source: Durth and Gutschow (1988)

While proposing many ideas about how cities could be remodelled by technocrats to accommodate automobiles, Le Corbusier’s ideas were not codified in any form of standardised professional practice. It was later, in the 1940s and 1950s that “scientific”, quantitative methods of planning cities for cars were developed. A model of professional practice for the technician or engineer to address the central problem of reducing or removing impedances to the free flow of traffic appeared in post-World War II USA in the form of Urban Transport Planning (Banister and Hall, 1981). Ferguson (1994) identified the origin of Urban Transport Planning (UTP) as early as 1944 when the US Bureau of Public Roads first began collecting data on the origins and destination of vehicle trips made in urban areas. In the 1950s large scale, long term regional transportation studies were carried out in major US cities, and these provided information on trip-making patterns and related factors such as land uses. In 1954, Mitchell and Rapkin identified the link

between transport and land use and contributed to the development of theory for UTP. The main interest of Mitchell and Rapkin was to reduce “the friction of space” and create free-flowing traffic by increasing road surface area. The fundamental problem in the view of technical transport planners and economists was the excess of demand for road space which resulted in congestion at peak periods:

...the primary focus is on the problem of moving passengers into and out of cities during the peak or rush hours, occurring mornings and afternoons of workdays. It is these movements that tax the capacity of existing urban transport facilities and create the congestion and delays that most people associate with what has come to be known, for better or worse, as ‘the urban transportation problem.’ Intracity freight movements and passenger trips at other times of the day or week can and do create important problems but these are almost always of second-order importance (Meyer, Kain and Wohl, 1965:5).

As a means of addressing “the urban transportation problem” of delays and impediments to fast motor vehicle movement, UTP incorporated a set of mathematical modelling tools, computer programmes based on the model, and a planning process (Ferguson, 1994).

The overriding goal of UTP was to provide mobility, which has more recently been defined as road capacity (Dittmar, 1995) and the vehicle kilometres travelled per person (Ross, 2000). It was a supply-side approach to urban transport management and did not by-and-large consider transport demand management, as this ran counter to its historical and philosophical roots. It was firmly believed that motorisation was a desirable and valued process because it reflected consumer choices in free market economies and was an inevitable part of wider processes of progress and modernisation. The implication of transport economics is that consumer behaviour, and the aggregate utility of individual consumers is optimal, and should be accommodated. The practice of designing changes to urban transport systems fell largely to engineers, who viewed the central problem as the reduction or removal of impedances to the free flow of motor vehicle traffic.

### 2.2.2 Rent-seeking and special interests

While “correct” policies and government actions can clearly be identified by the UTP process and other technical measures consistent with transport economics, these are not always taken and the actual process diverges from the idealised process. According to economists, this occurs because vested interests benefiting from “incorrect” policies engage in lobbying of decision-makers and other means in order to maintain or increase the benefits (“rents”) they receive.<sup>10</sup> As a result, more optimal or “correct” policies remain unimplemented. This kind of “uncompetitive”, illegitimate behaviour is commonly referred to by economists as rent-seeking. In addition, rent-seeking is seen as irrational, value-laden, and un-objective, and ultimately economically unproductive, at least partly because the most economically efficient actions will not necessarily be implemented by rent-seekers, who have no incentives to compete. According to Gordon and Richardson (1997):

Generally, rent-seeking activities are facilitated by the actions of dirigiste governments, which in turn feed off rent-seekers. This augments the possibilities for waste; ... resources are also diverted to the politics of seeking or avoiding favorable or unfavorable regulation. Dynamic analysis is even more disturbing: rent-seeking deters the ‘creative destruction’ of buoyant economic growth; ... the market losers are often the most politically connected, as well as the most economically motivated to resist changes (Gordon and Richardson, 1997:101).

Transport economists attribute much of the steep decline in the use of public transport to rent-seeking by public transport operators holding profitable monopolies. They argue that while public transport is inherently inferior to private motorised transport, the decline in the US was accelerated because of the inflexibility, unresponsiveness, and uncompetitiveness of public transport. According to Kain, one of the doyens of transport economics, “errors” in public transport were made as a result of rent-seeking:

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<sup>10</sup> “There are many people whose interests are well served by the smooth functioning of markets, but there are also groups whose established interests may be hurt by such functioning. If the latter groups are politically more powerful and influential, then they can try to see that markets are not given adequate room in the economy” (Sen, 2000:120).

The steady rise in auto ownership and declines in transit use since 1895 were largely efficient responses to changes in technology and rising incomes. At the same time mistakes in public policy and errors by transit operators in their choice of technologies caused not only declines in transit ridership in the last half of the twentieth century, but also larger public subsidies for transit than were necessary (Kain, 1999).

In addition to distorting forecasts and policies, rent-seekers contribute to the “errors” in public policy that Kain referred to. One of these public policy errors was legislating against the operations of “free enterprise public transport.” Transport economists argue that if regulations were removed and public transport monopolies were abolished, more “free enterprise”, flexible, and road-based public transport would emerge and better compete with the private automobile (Mees, 2000). It is often argued that the unionisation of public transport workers prevents small-scale, low-cost private operators of commuter vans, or jitneys, from cost-effectively operating services in the cities of developed nations. Analysis of free market responses in circumstances of minimal regulation is echoed by Cervero in works on “paratransit” in America (1997), and on “informal modes” of transport in cities of the developing world (2000).

Another error according to many transport economists was the retention and expansion of capital-intensive fixed track (and hence inflexible) rail facilities. This error is also viewed as the result of special interests: in this case, central city property and business interests and rail equipment providers, which together collude to encourage investment in “expensive downtown-focused rail transit systems” and compact cities, both of which consumers don’t want, given that the increasing majority drive cars and live in the suburbs (Gordon and Richardson, 1997). As interest in new rail rapid transit systems grew in the 1970s, Hamer (1976) responded by alleging that rail advocacy in the USA was the result of “an unhealthy relationship between regional decision makers and various pressure groups”:

Many of the influential interest groups [downtown property owners, contractors, and consultants who might be called on to build the recommended systems] promoting rail rapid transit are convinced that the spinoffs of such a system are as important as the movement of

persons. Land owners in areas to be blessed by stations and central city mayors hungry for new tax revenues are allied with those who see in rail a panacea for every conceivable urban ill. The transportation aspect is often obscured even in the so-called cost-benefit analyses made to rubber stamp the decisions already taken. ... In all cases, feeble evidence is marshalled to champion the rail lines as job creators for the poor, mobilizers of the elderly and handicapped, and harbingers of a more vibrant, civilized city (Hamer, 1976:249).

Similarly, Wachs has argued against the introduction of new urban rail systems to Los Angeles on the basis that construction of such systems is “unnecessarily costly and that it will provide poorer service than an alternative system of express buses” (Wachs, 1989:147). Much of Wachs’ critique is based on forecasting, which he views as inaccurate and manipulated by special interests associated with the rail projects.

### **2.2.3 Road pricing**

In addition to special interests preventing free enterprise public transport and promoting rail mass transit, economists commonly identify distorted pricing and the lack of charges for the use of public goods as problematic. Economists recognise that the use of motor vehicles in urban areas results in problems, or external costs, such as air pollution and traffic congestion, the latter which is excessive demand for road space. Accordingly, the main goal of public policies related to urban transport should be to “internalise the external costs” and ensure that motorists as sovereign consumers pay the full costs of automobile use within a free market context. According to economists, problems attributed to the growth in motor vehicles are best addressed not through “heavy-handed”, “command and control” government intervention into land markets or the provision of public transport, but through minimal regulation and “correct” pricing. Economists generally view government intervention as inefficient, and support road and fuel pricing instruments that can be used to internalise the externalities and better reflect the “true prices”. Problems with negative externalities can be addressed by “getting the prices right” and market-based measures that capture external costs into pricing and provide consumers with better information on which to base their decisions.

While highly rational and desirable according to transport economists, road pricing has been implemented in very few places, as a result of opposition of interest groups (Wachs, 1995). One of the first proposals for a road pricing systems was made for the City of London in the early 1960s, but was not implemented at that time. A serious attempt to implement electronic road pricing to allocate scarce road space was made in Hong Kong in the 1980s while it was still under British rule. In 1983, the British Secretary for Transport in Hong Kong announced an electronic road pricing scheme intended not only to reduce traffic congestion which had been worsening, but also to commercialise technology developed by Britain's Ministry of Transport in London, where it had been proposed but not implemented. While the short Hong Kong trial was successful in technical terms, the scheme was vigorously opposed by local district boards, industry-consumer lobbies such as the Hong Kong Automobile Association, and by motorists (Chan, 1989). There were also concerns over privacy, or the purposes for which the government could use the information that would result from tolling people's movement (*The Economist*, 6 December 1997). This experience of opposition to electronic road pricing has been more recently reported in the USA, where the implementation of even short term congestion pricing experiments are stymied by political problems, such as opposition from groups perceived to be negatively affected (Colgan and Quinlan, 1997). In one of the only other cases, an electronic system of collecting tolls during peak times in Trondheim, Norway, has been successfully implemented in the 1990s, although only after 20% of the revenue, which was originally all intended for road expansion projects, was devoted to public transport, safety, and environmental measures. This was a result of pressure from political parties opposed to road-building (personal communication, Tore Saeger, 2002).

While championed by economists who are largely pro-motorisation and concerned with fast motor vehicle movement, road pricing has also been taken up as desirable by some opponents of motorisation. Ironically, a congestion pricing scheme largely supported by free market economists was finally implemented in

London in 2003 under a social democrat mayor who was motivated by opposition to motor vehicles in the city. Philosophically, he came from another position, that of motorisation critics who view motorisation itself rather than selected problems of motorisation as the main urban transport problem. These criticisms began in the early stages of motorisation in the USA and other Western nations.

### **2.3 The problems with motorisation**

Early criticisms of motorisation and purportedly objective planning which facilitated it emerged in response to the destruction wrought by expressway-building in American cities. Two seminal 1961 works, *The Death and Life of Great American Cities* (Jacobs, 1961) and *The City in History* (Mumford, 1961), questioned the positive values being placed by American planners and city-builders on speed, mobility and motorisation.<sup>11</sup> These clear arguments against technocratic city planning heralded the early undermining of modernist ideas about progress and development in general. Jacobs based her critique on observations of daily life in the inner city neighbourhoods of New York's Greenwich Village and Boston's North End. Jacobs identified automobile facilities as instruments of city destruction, but placed the blame not only on the automobile as a response to transportation and traffic needs *per se*, but also on "sheer disrespect for other city needs, uses, and functions" (1961:353). Similarly, Mumford railed against America's paragon of modernist city planning and transport economics:

Los Angeles has now become an undifferentiated mass of houses, walled off into sectors by many-laned expressways, with ramps and viaducts that create special bottlenecks of their own. These expressways move but a small fraction of the traffic per hour once carried by public transportation, at a much lower rate of speed, in an environment befouled by smog, itself produced by the lethal exhausts of the technologically backward motor cars. More than a third of the Los Angeles area is consumed by these grotesque transportation facilities; *two thirds* of central Los Angeles are occupied by streets, freeways, parking facilities, garages. This is space-eating with a vengeance (Mumford, 1961:581).

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<sup>11</sup> While united against foes such as Robert Moses who built expressways in New York City from 1920-1960, Jacobs criticised Mumford for supporting decentralisation, lower densities, and small cities.

The impetus for these early critiques of motorisation was the decimation of established neighbourhoods and communities by road-building and the subsequent air and noise pollution brought upon the inner city by automobiles. These impacts were rarely factored into the calculations of early urban transport planners such as Mitchell and Rapkin (1954), who saw the primary function of local transportation systems as reducing “the friction of space”. While fast motor vehicle movement was (and still is) considered by many to be the primary reason for building roads, this and other principles were called into question by critics such as Jacobs, who argued that changes which she was observing in New York and other eastern seaboard cities were not contributing to a better quality of life as promised. These changes were carried out in the name of “progress”, and included suburbanisation and changes to streets to accommodate longer distance motor vehicle movement at the expense of localised social activities and interactions. She argued that rather than solving problems, the modernist programmes for city-building such as “urban renewal” were creating problems. Her personalised and anecdotal account challenged the positivistic, modernist approach to city-building which had accelerated in the US during the years immediately following World War II. Jacobs also criticised what she perceived as an anti-urban approach of “Garden City social reformers” led by Ebenezer Howard who had been particularly influential prior to the 1950s in articulating an intellectual basis and justification for the urban sprawl which was to follow.

This was the first fully articulated woman’s perspective on modern urban life (Berman, 1981) and presaged the role of feminists in undermining modernist ideas. Although Jacobs did not identify herself as a feminist, subsequent feminist critiques were one of the major socio-cultural factors that undermined the modernist paradigm (Sandercock, 1998). These critiques highlighted the increasingly apparent observation that urban transport motorisation, land use segregation, and suburbanisation of homes were being facilitated and planned by professional males. At the same time, females (and social groups such as the working classes and poor) were not receiving many of the benefits of these

changes and were excluded from formal, “technical” planning processes facilitating changes. “From the routes of public transport to the location of key educational, cultural, and health facilities in downtown urban centres, cities and their planning processes could be seen as excluding women from participation” (Sandercock, 1998:18).

The criticisms of modernist city building and motorisation appeared to be borne out as increasing accounts of “losers” and “winners” emerged in the USA (e.g Schaeffer and Sclar, 1975). Owen (1972) and others argued that the interests of motorisation and urban livability were fundamentally at odds and there was a worldwide conflict between cities and cars. These were not just technical issues. In the USA, it became increasingly apparent that new freeways were facilitating the movement of predominantly white middle class Americans from central cities to suburbs while abandoning ethnic minorities, poor and marginalised social groups to central city neighbourhoods, which then became even worse off. The very integrity of these central and inner city neighbourhoods was undermined by the demolition and neighbourhood severance caused by freeway structures themselves. While perhaps unintended, the “modernist zeal to eradicate traditional street patterns” and accommodate fast motor vehicles led to undermining of the social patterns of life that were associated with those traditional urban forms (Graham and Marvin, 2001:119). The freeways provided a means of fast movement between city and suburb, while at the same time contributing to the physical and social fragmentation of the city and making it a less attractive residential choice for those who could afford alternative arrangements. Engineers and builders of these public infrastructure works justified their actions to the mass public on the basis that they were the “vehicle of world-historical forces, the moving spirit of modernity.... To oppose ... bridges, tunnels, expressways, ... was ... to oppose history, progress, modernity itself” (Berman, 1981:294).

In addition to the challenges of feminists and other social critics who argued that they did not value the changes taking place, theorists of public planning and ethics began recognising that the idea of planning as a solely technical activity was a

fallacy (Harper and Stein, 1992; Klosterman, 1978). One of the first accounts of the politics of planning in the USA argued that “Significant planning problems are never simply technical; they always involve the determination of priorities among values” (Altshuler, 1965:4-5). In Altshuler’s 1965 account, one case study used to illustrate this point is that of a planned limited access intra-urban highway through Minneapolis. In this case, a local African American community would have been split with much of the population displaced, while national highway engineers sought to move private motor vehicles at ever higher speeds. This recognition that value-free planning was impossible led to a number of responses.

One of the earliest responses was the proposal by Davidoff (1965) of “advocacy planning”. Davidoff argued that planners should recognise that their practice was not value-neutral and that planners should make clear their values and should act as advocates on behalf of marginalised communities and their interests:

...planners should be able to engage in the political process as advocates of the interests both of government and of such other groups, organizations, or individuals who are concerned with proposing policies for the future development of the community. ... The welfare of all and the welfare of minorities are both deserving of support; planning must be so structured and so practiced as to account for this unavoidable bifurcation of the public interest (Davidoff, 1965:332).

More recently, Forester (1989) has argued that “planning in the face of power” is a reality that must be confronted. Planning is bound to the exercise and rationalisation of power and as a result it is both a technical and political activity:

Planning is the guidance of future action. In a world of intensely conflicting interests and great inequalities of status and resources, planning in the face of power is at once a daily necessity and a constant ethical challenge. ... [T]he structure of the economy organizes autonomy and independence for some people, powerlessness and dependency for others. Planners do not work on a neutral stage, an ideally liberal setting in which all affected interests have voice; they work within political institutions, on political issues, on problems whose most basic technical components (say, a population projection) may be celebrated by some, contested by others. Any account of planning must face these political realities (Forester, 1989:3).

While there are differences in interpretations of the nature of power and politics, there is general agreement among these planning theorists that the role of public planners should be to assist those with less power. These approaches advocate public planning that is explicitly based on normative ethics (involving substantive argument about what is the right thing to do) rather than instrumental, or rational, planning which focuses on applying value-free social science, classical economics, systems analysis, and quantitative management techniques to public decision making (Harper and Stein, 1992).

### **2.3.1 Automotive interests and the road lobby**

In addition to identifying groups which were made worse off by motorisation, the interests which benefited from motorisation came under increased scrutiny. Mumford (1961) suggested that motorisation was being facilitated through the reduction of urban transport alternatives with the encouragement of automobile manufacturers:

Our highway engineers and our municipal authorities, hypnotized by the popularity of the private motor car, feeling an obligation to help General Motors to flourish, even if General Chaos results, have been in an open conspiracy to dismantle all the varied forms of transportation necessary to a good system, and have reduced our facilities to the private motor car (for pleasure, convenience, or trucking) and the airplane. They have even duplicated railroad routes and repeated all the errors of the early railroad engineers, while piling up in the terminal cities a population the private motor car cannot handle unless the city itself is wrecked to permit movement and storage of automobiles (Mumford, 1961:508).

A heightened public awareness of a conflict of interest between automobile manufacturers and interests in reducing energy use resulted from the oil crises in the early 1970s. The first oil crisis, in 1973, renewed interest in the US in mass transit (Taebel and Cornehl, 1977). Significantly for debates about urban transport, Los Angeles and other sprawling and automobile dependent cities were hit particularly hard by petrol price increases, and air quality continued to deteriorate.

The emergence of *global* environmental concerns and oil crises in the early 1970s invigorated criticisms of motorisation and mobility originally voiced on behalf of local communities adversely affected. The questioning was particularly pronounced in Anglo-American cities where motorisation had been aggressively pursued and which were becoming increasingly automobile dependent and polluted. These academic and community criticisms of motorisation were given more substance when the US government investigated links between companies associated with motorisation and the dismantling of rail systems in US cities. In 1974, the US Senate investigated the charges of Snell, an antitrust attorney, who testified that General Motors (GM) and allied highway interests comprising oil and tyre companies were involved in the destruction of 100 electric rail systems around the USA. The most celebrated (and debated) case was Los Angeles, where a privately owned system of interurban electric rail was by 1923 the largest in the US, and shaped the relatively young city's growth and urban form (Wachs, 1998). According to the 1974 testimony of the Mayor of Los Angeles, the streetcar system was scrapped by GM, through its affiliates, in order to motorise Los Angeles' transportation system (Slater, 1997). This explanation of the decline of public transportation in Los Angeles was popularised in a 1996 US public television documentary called *Taken for a Ride*, which documented growing disillusionment with conventional transport planning and the way that the road lobby and other vested interests facilitated the destruction of extensive urban rail systems and promoted building the Interstate Highway System (Klein and Olson, 1996). Taebel and Cornehl (1977) presented the road lobby as a "great web of automotive interests" (Figure 2.3) which actively shaped urban transport:

... [T]he auto's continued place of privilege in the United States is attributable to the fact that alternatives to the car are virtually non-existent; that some very powerful economic interest groups have labored hard and long to keep it that way; and that the structural characteristics of the nation's economy work to prevent the kind of changes needed to develop viable transit alternatives (Taebel and Cornehl, 1977:60).

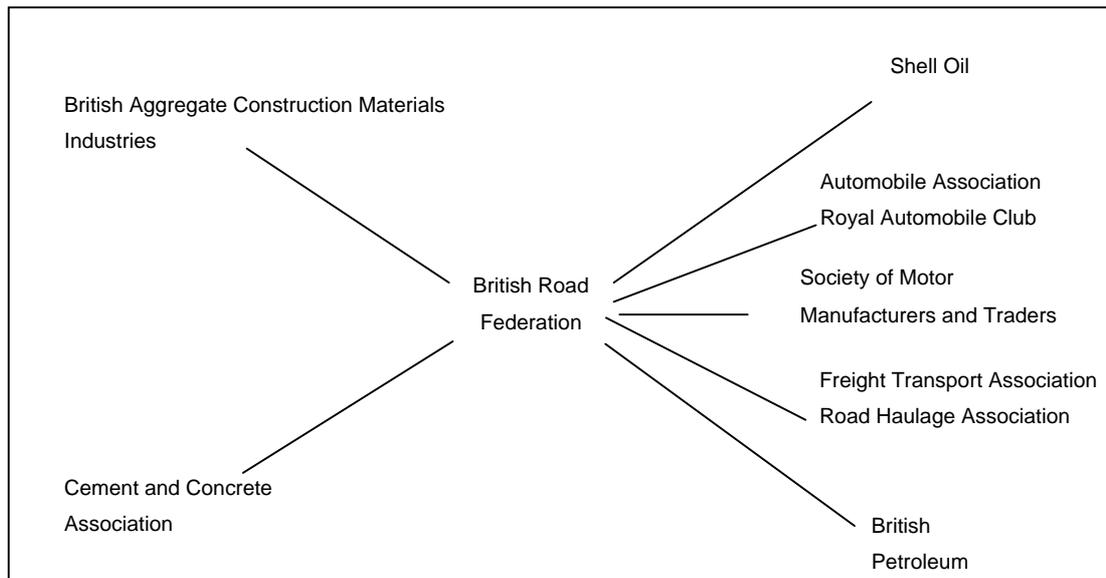


1990:122). Adler (1988) suggests that the characteristics and actions of place-based pro-growth coalitions in Los Angeles prevented the realisation of new rail systems which at the same time were successfully built in California's other large city, San Francisco.

These findings that a certain set of powerful corporate interests benefited from car-based urban transport was borne out by international comparisons with cities in other industrialised nations where different corporate and different complexions of interests was found. A comparative study by Yago (1984), which examined the decline of public mass transportation in German and US cities between 1900 and 1970 found that in the US, public transit declined in favour of motorised private transport with the rise of a "corporate car complex" which worked to limit state transportation policy and influence and struggled against older corporate interests associated with rail transit. "In short, the policy leading to transit's decline was one that minimised public control over transportation programs and maximised corporate benefits" (Yago, 1984:76). In Germany, a different set of industrial interests led to a more rail-based system and less precipitous decline in public transport use (Yago, 1984).

These industrial interests facilitating the decline of public transport and rise of motorisation were not just found in the US. Environmental activist Hamer (1987) identified the structure of a core road lobby (Figure 2.4) and its political activities in the UK centred on the British Road Federation. More recently, Laird et al (2001) catalogued over sixty road-related lobby groups which together form a substantial political barrier to reducing subsidies to roads and rehabilitating and expanding Australia's rail system.

**Figure 2.4 The main links in the UK road lobby**



Source: redrawn from Hamer (1987)

Pursuing a slightly different line of argument, Altshuler et al (1979) implicated commercial interests in both road and rail infrastructure development in influencing the definition of urban transport problems, policies, and plans in US cities. They found that in some areas where declining public transport use had become a public issue and road building was contentious, local officials in those areas found it far more attractive to join the campaign for new rail infrastructure rather than siding with communities against proposed expressways, because the former did not entail any conflict with business or construction interests (Altshuler et al, 1979). To Altshuler et al, these infrastructure projects are not necessarily needed but serve as “pre-selected solutions” to urban transport problems.

While the preceding analysis was of the situation in industrialised nations, Vasconcellos (2001) identified a range of organised private agents with interests in benefiting from urban transport and the wider socio-spatial organisation of cities in industrialising nations. These private interests included the automotive industry, the construction and real estate sectors, industries dependent on goods

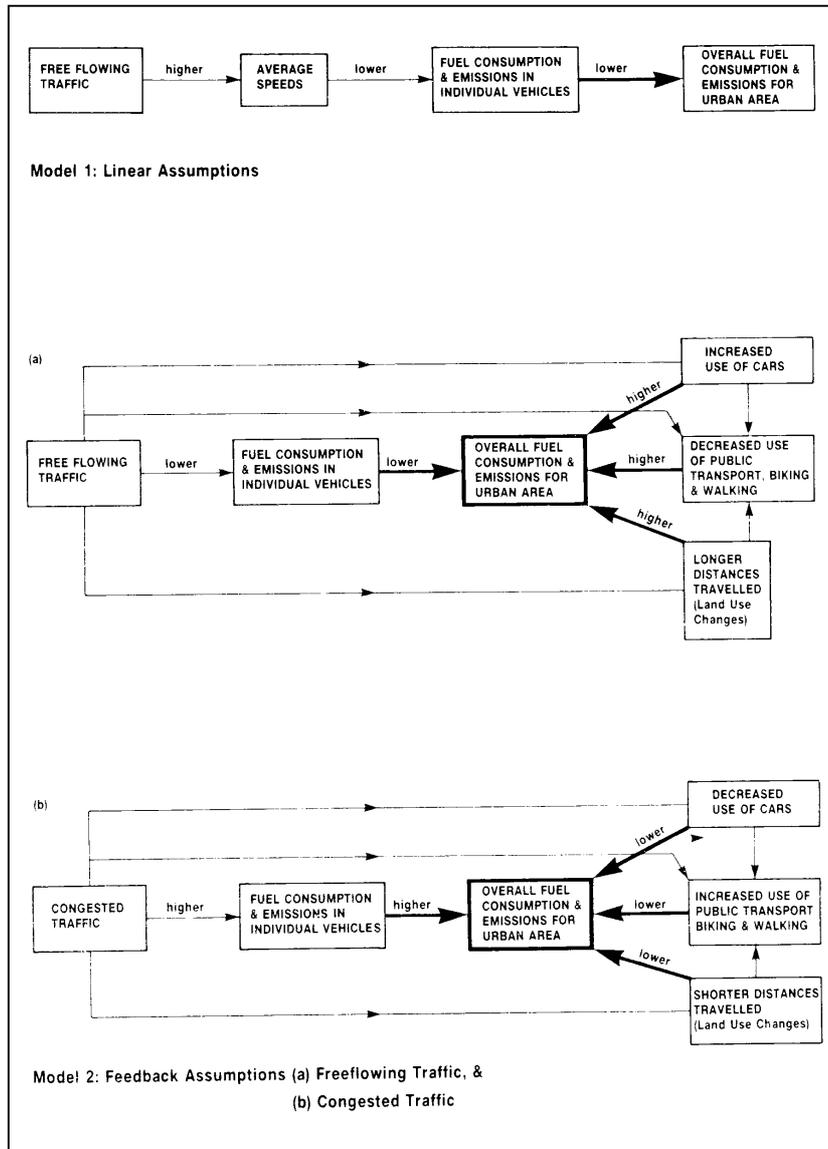
movement, finance sector, public and private passenger transport operators, private consultants, and international lending institutions (Vasconcellos, 2001).

### **2.3.2 Induced demand**

It was not just the immediate benefits to automotive interests and infrastructure interests which were criticised. Another challenge to Urban Transport Planning was mounting evidence that road-building was not simply meeting consumer demand, but was also generating new, “induced” demand for motorised travel in cities. In the UK a series of government committees and documents and related academic works did much to dispel existing notions about meeting demand for motorised travel. A UK government committee, the Standing Advisory Committee on Trunk Road Assessment (SACTRA) in 1994 reported that road construction in conditions of congestion normally results in an increase in the total volume of traffic, hence a shorter period of relief from congestion (Goodwin, 1997).

Research on induced demand has also challenged a key assumption of, or rationale for, road building: that free-flowing, fast moving motor vehicles reduced fuel consumption and air pollution in cities (i.e. provided benefits), because at higher speeds vehicles exhibited faster, more efficient burning of the fuel (Figure 2.5). This assumption was based on the performance of an individual vehicle (reductionist research), but was challenged based on the performance of a whole urban area and a feedback relationship (holistic research) (Newman and Kenworthy, 1984, 1988). The other key assumption that was challenged was that roads could be built to meet demand for motorised travel.

**Figure 2.5 Conceptual models for understanding transport energy use and emissions in cities**



Source: Newman and Kenworthy (1989)

These approaches effectively provided greater evidence for what had been hinted at by Jacobs and Mumford: while purporting to be completely objective and value free, planners anticipating motorisation were in fact encouraging the process. In a cycle of positive reinforcement, motorisation was then used as evidence of the desirability and inevitability of cars and suburbanisation. In contrast to the values and interests of the motorisation proponents, the critics called into question the value of mobility and open-ended accommodation of motor vehicles. The

### **2.3.3 Links between wealth and motorisation and global comparisons**

A third challenge was evidence that there were wealthy cities around the world which had not become as automobile dependent as US cities, and people appeared to be satisfied with public transport. A catalyst in the debates about the role of urban transport in moving toward more sustainable development through international comparisons was the work of Newman and Kenworthy (Banister et al., 1999). Significantly, this research was the direct result of Australian government funding through the National Energy Research, Development and Demonstration Council, which was made available at least partly in response to the 1970s fuel crises. This work began with a quantitative comparison of the characteristics of transport and land use in Australian capital cities (Newman and Kenworthy, 1980) and was expanded internationally, first to 32 cities (Newman and Kenworthy, 1989), then to 46 cities (Kenworthy et al., 1999) and most recently to 100 cities (Kenworthy and Laube, 2001). These studies challenged the “science” of transport economics by looking holistically at cities and communities rather than vehicles and individuals.

Building on the research of Newman and Kenworthy (1989), Kenworthy and Laube (1999) and Litman and Laube (2002) compared a range of standardised data and correlations on transport, land use, and economic characteristics in 46 cities in 1990.<sup>12</sup> The basis for their conclusions is the differences in data between cities (rather than individual consumer behaviour) at one point in time (rather than over time). Their main finding was that some cities with high aggregate levels of wealth (based on GRP/ capita) had lower levels of automobile dependence than less wealthy cities. In addition, a number of wealthy cities had vastly different levels of car use (eg. US cities compared to wealthy Asian cities such as Singapore, Hong Kong and Tokyo). They concluded that based on this comparison of cities that while “the tendency to use growing wealth to purchase cars is clearly a very strong force .... there appears to be no compelling reason for

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<sup>12</sup> The dataset includes figures for the years 1960, 1970, and 1980, but no systematic time series analysis is undertaken.

believing that increasing wealth automatically equates with higher automobile dependence” (Kenworthy and Laube, 1999: 616). They asserted that growth in wealth and car use was “simultaneous” in cities when car ownership was at a relatively low level, but growth in car use peaked at a certain “optimum”<sup>13</sup> and after that point further growth in car use was detrimental to a city’s economic development. The reason was that with high levels of motorised vehicle use, negative externalities or external costs (which they refer to as “diseconomies”) emerged:

...[C]ities can reach a point where there are diseconomies in too much automobile use and high provision of automobile infrastructure, ... . No data appear to contradict it and all the direct and indirect costs of transportation support the idea that excessive automobile use drains the economy of a city (Kenworthy and Laube, 1999: 638).

The reasons identified for diseconomies were the negative externalities of high levels of use of motorised vehicles (i.e. market failure) which were the results of physical, environmental limits to motorisation. They concluded that the link between wealth and auto dependence was weak:

Uncontrollable increases in car ownership and use and declining use of public transport and non-motorised modes in cities is not inevitable simply because wealth is increasing rapidly. Many cities ... which have similar high levels of wealth exhibit vastly different levels of car and transit use. It is suggested here that basic differences in land use and transport priorities between cities such as urban density, road and parking provision, transit service and quality, the attractiveness of the environment for walking and cycling, as well as the pricing of private transport, are important in understanding... [why levels of car and transit use vary between cities] (Kenworthy et al, 1995:66).

Kenworthy et al suggested that goals or priorities of governments were the fundamental determinants of cities’ urban transport characteristics. They found that physical planning and economic policies favouring public transport and non-motorised modes were in place in the cities with lower levels of motorised vehicle

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<sup>13</sup> In an earlier work, Laube (1998) postulated that the optimal level of public and private transport can be calculated numerically given certain data on the economic and physical activity characteristics of a given city. He found that virtually all cities had public transport usage levels below the calculated ‘optimum’, which would yield a ‘least cost’ solution for their transport systems under the particular land use arrangements and other circumstances in the city at that time.

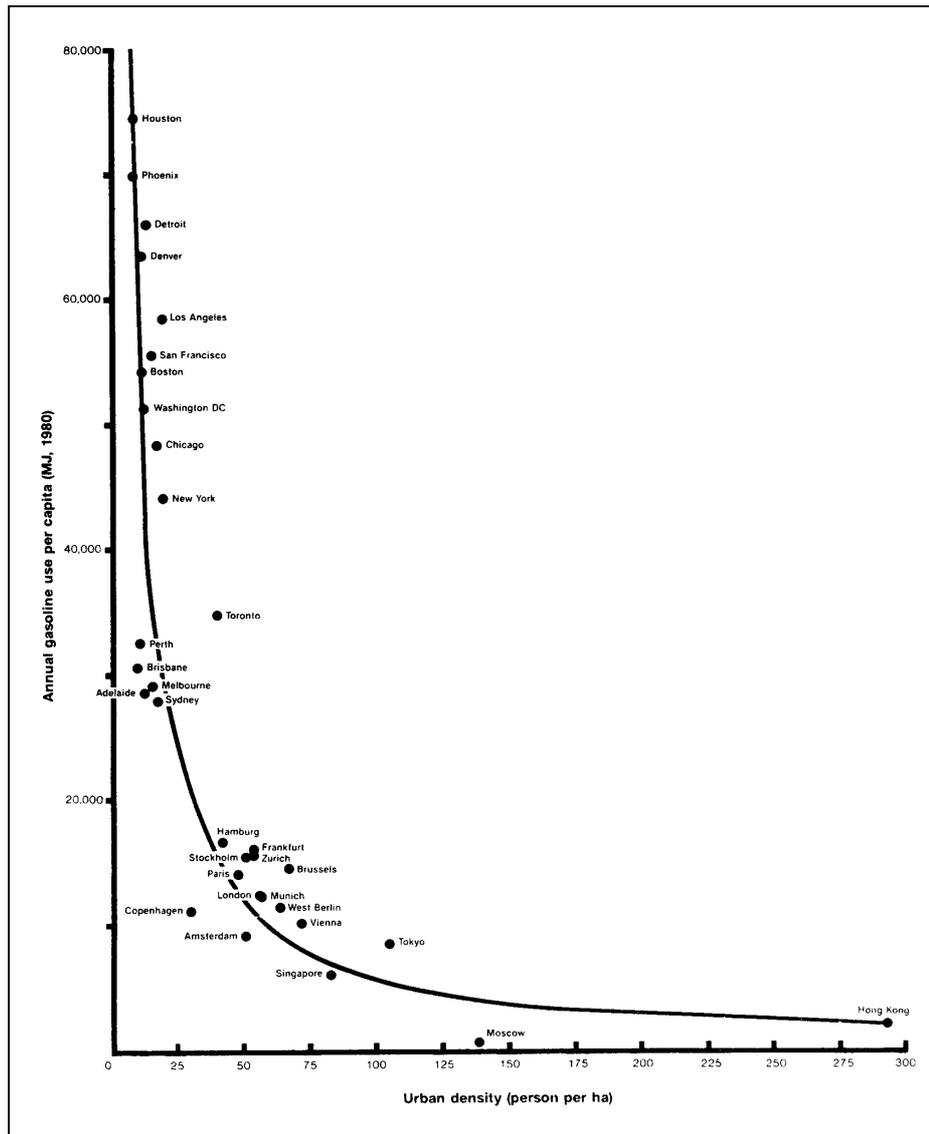
ownership and use.

Newman and Kenworthy (1989) concluded that economic factors such as income and petrol price were less important than the physical characteristics of cities. According to their analysis, this is because metropolitan population density is the primary factor that determines automobile dependence and motorisation, and that automobile use declines swiftly where overall metropolitan densities exceed 30 to 40 persons per hectare (Figure 2.6). This relationship is also reinforced by the more recent analysis of Kenworthy and Laube (1999) who find that:

...the population or urban density of the whole city, is perhaps the most critical variable in helping to understand transportation patterns.  
... the most auto-oriented cities in the sample, the US and Australian cities, also have the lowest densities (averaging around 13 persons per ha) (1999:547).

More globalised concerns about urban transport emerged under the rubric of “sustainable development” which entered mainstream political debate in many developed and developing nations in the 1990s. The language and ideas of sustainable development were used to frame urban transport problems, which were increasingly recognised as inextricably linked to environmental problems. Growing concern also emerged over the rapid rise in motorised vehicles in the developing world, and particularly in Southeast Asia, China, and India (Whitelegg, 1993).

**Figure 2.6 Gasoline use per capita versus urban density (1980)**



Source: Newman and Kenworthy (1989)

Concerns about motorisation began extending beyond cities in the more industrialised world where most motorisation has occurred in the past. Dimitriou (1992) argued that transport planners trained in the West applied the Urban Transport Planning process in developing nations with inequitable results because incomes were too low for mass car ownership. Similarly, Hook (1995) argued that the World Bank utilised methodologies on transport projects which encourage road building over non-motorised transport. In these cities, investments were made largely into roads which were used by small, wealthy segments of the population. Looking specifically at Brazil's middle income metropolises,

Vasconcellos (1997) argued that in cities in developing countries, people's choices were so constrained that consumers making free choices was impossible. In these cities, the idea that a public interest was served by road building was even more tenuous than in the US:

The dominance of the automobile was supported by the myth that road investments are made in the public interest. Large economic resources were applied in roadway expansion based on the myth that roads would be evenly shared by all. However, the mere provision of streets does not mean that people will be transported: if public transport is not made accessible for all, then streets are just private means of consumption awarded to selected groups, but constructed and maintained with public resources .... Often, the myth of roads as public assets is accompanied by explicit condemnation of transit subsidies as heretical and by continuous pressure to make public transport systems survive on their own – which often implies overcrowded buses and low frequency services – while the hidden subsidies to automobiles remain untouched (Vasconcellos, 1998:17).

These arguments recalled the premise of Adams (1981), who introduced the concept of a bifurcation between the wealthy mobile and the poor immobile which forms part of the rationale for this thesis research. On a global scale, Adams (1981) argued that the problem of bifurcated interests between the mobile and non-mobile was global and the mobility of the wealthy Global Villagers was burdening the world's poor while offering a promise of mobility for all that was an illusion.

#### **2.4 Solutions to motorisation: a shift in values**

To its critics, motorisation was a problem that had to be solved by restraint and management, or even reversal. Conversely, those in favour of motorisation looked at the main problems as accommodating the motor vehicles and traffic congestion which resulted from excess demand for the use of motor vehicles. Road pricing has been opposed by some transport experts such as Dimitriou (1998) who argued that it would enhance the mobility of the rich and extend the financial dependence of governments on driving elites as revenue generators. Even *The Economist*, a long-standing proponent of road pricing, acknowledged that this is a regressive tax requiring poor people to pay a larger proportion of their income for the same

service, and there are “few things that are more egalitarian than a traffic jam” (*The Economist*, 17 February 2003).

Among critics of motorisation, there have been a variety of opinions about how cities should move away from motorisation and overcome automobile dependence. Researchers critical of motorisation have used their findings in order to advocate transport policies and plans which do not facilitate motorisation. For example, Newman and Kenworthy (1989, 1999) have openly used their research results in a form of advocacy for “re-urbanisation” and densification of inner cities and investment in facilities for rail and non-motorised transport. According to their analysis, these physical changes would reduce fuel consumption, re-urbanise existing inner city areas, and increase public transport usage. They have not provided models of change processes, but have emphasised the role of physical planners and government actions which have implied a high level of autonomy of state and actors to choose “sustainable transport” policies and plans. The focus of Newman and Kenworthy (1989, 1999) and Kenworthy and Laube (1999) and most other proponents of sustainable transport have been advocating of actions to change physical planning by public authorities. Such changes, according to their analysis, can be oriented to invigorate public transport, walking and cycling, thereby reducing the use of private motor cars and the resulting negative externalities.

Newman and Kenworthy also acknowledge that it is not possible to write without values, and that Jane Jacobs is an inspiration in their fight for “green,” “sustainable” cities (Newman and Kenworthy, 1999). The values they identify as important for the basis of “urban professional practice” are the global natural environment, social justice, heritage, the public realm, urban economy, and local community (Newman and Kenworthy, 1999:294). Implicit in the identification of these values is a rejection of the values of transport economics: individual consumer choice, mobility, motorisation, and low-density housing. They place high values on maintaining the integrity of the natural environment as well as built environments pre-dating the automobile age, and particularly use of non-

renewable energy, and energy efficiency. They also identify the urban economy as an essential component of their value set, but it is a more holistic view than is normally taken by economists.

Another assumption of transport economics which was challenged by critics of motorisation was evaluation of urban transport systems solely on the cost of construction and operations of that infrastructure and its ability to maximise aggregate mobility for minimum cost. Vuchic attacked the reductionism and economic utilitarianism of approaches that examine urban transport on solely cost and other economic criteria. Vuchic (1999) suggests that *The Urban Transportation Problem* (Meyer, Kain, and Wohl, 1965) was seriously flawed because various modes of urban transport were compared on cost alone, disregarding some of “the most important goals and criteria that must be included in transportation planning” (1999:28). Vuchic proceeded to point out that applying this economic and reductionistic method to complex urban transport systems, we reach the “absurd conclusion that motorcycles are superior to all other modes of urban passenger transportation”. Vuchic argued that different types of trips and different consumers required choice among a number of modes, all of which should contribute toward a better quality of life. Similarly, one of America’s most celebrated planners, Edmund Bacon, decried the use of quantitative techniques:

The cost-benefit ratio was one of the first of these, a “scientific” method for determining where a highway should be placed by adding up the costs of alternative highway routes and comparing these with a quantification of the value in dollars of the time saved by the highway user. This was adopted universally as the only right way to do things until its continued use imposed such outrageous consequences that it dawned on someone that saving the highway users a few seconds of time would be less socially and economically desirable than destroying irreplaceable landscapes, historical sections of cities, coherent neighborhoods, or networks of human relationships. Underlying it all was the failure to realize that the development of policy through the manipulation of numbers is always bound to be wrong because numbers by definition leave out the unquantifiable variables: Human passions, beloved traditions, human will, and it is these which are really important (Bacon, 1988: 2).

By the 1990s ideas about “sustainable transport” provided an umbrella for a diverse range of actors who disputed the claims of transport economics, and approaches which value motorisation and suburbanisation, given that these choices can degrade urban environments and contribute to the depletion of non-renewable resources.

## **2.5 Conclusions**

As a result of mounting critiques, since the 1970s the Urban Transport Planning model has been in a state described as “rejection” (Healy, 1977) and “ad-hocism and disarray” (Dimitriou, 1992). However, UTP continues to be a powerful tool in many places, assisted by more sophisticated models, forecasting techniques, and computer tools. In many cases, methodological sophistication and complex processes have served to obscure what is often the absence of explicitly stated interests of communities being planned for. One reason is that it is suited to long-term, large scale infrastructure planning or supply-side approaches to urban transport planning (Ferguson, 1994). It also can be used to add sanction to what has already been decided or provides technical information that shifts the power among competing interests (Willson, 2001). Supply-side, infrastructure-led solutions to transport problems are popular among politicians and decision-makers because they generate financial and other benefits to private companies without threatening powerful vested interests (Altshuler et al, 1979). Nonetheless, UTP and infrastructure-led solutions are continually being questioned, in many cases by individual and organisational representatives of communities threatened by transport projects.

Recently, there have been attempts by car and oil companies to argue for continued motorisation, or “sustainable mobility”: this can be seen as an attempt to incorporate criticisms using the language of sustainable development. Under the auspices of the World Business Council for Sustainable Development, an ongoing project initiated and funded by oil and car companies argued that increasing amounts of motor vehicle travel should be sustained because mobility is inherently good. In the first report, *Mobility 2001: World Mobility at the End of*

*the Twentieth Century and its Sustainability* (MIT and Charles River Associated, 2001), the idea of one people pursuing one undifferentiated interest in mobility is revisited:

People desire mobility. They desire it both for its own sake and because it enables them to overcome the distance that separates their homes from the places where they work, shop, seek medical attention, go to school, do business, or visit friends and relatives. Businesses also desire mobility because it also helps them overcome distance – the distance that separates them from their sources of raw materials, from their markets, and from their employees (MIT and Charles River Associated, 2001:1-1).

While in the past these claims would have been accepted, they are increasingly criticised. Ideas which were once held as givens have been increasingly questioned. Beginning in the 1960s but proliferating since the early 1990s, a range of alternative perspectives on urban transport have emerged, increasing our understanding of how urban transport changes, why it changes, and how it should change. Much of these critiques draw on “sustainability” as a guiding concept with its focus on the interests of future generations in mutual prosperity and environmental integrity. The language of “sustainable transport” discourses have even been appropriated by those (ie. engineers and automobile and petrol companies) who were intended as the targets of the critique when the discourse first emerged. In general, there is now little consensus, other than that different interests and values underlie different interpretations, and most research now explicitly or implicitly acknowledges those interests and values:

In addition to the formal governmental bodies that participate in transportation decision making, many, many, many interest groups bring competing perspectives to the debates over alternative policies, and alliances among those interests are constantly forming, dissolving, and being reformulated. Automobiles manufacturers, automobile clubs representing drivers, transit users, owners of urban real estate, environmentalists, construction companies and unions representing construction workers, representatives of the elderly, disabled people, ethnic minority groups, the poor, and many other groups claim interest in many transportation policy decisions and seek influence over the outcomes of policy debates (Wachs, 1995:372-3).

While the general state of urban transport knowledge is today characterised by significant fragmentation and disagreement, and largely irreconcilable differences,

there is general consensus that the public interest is now contestable and there are multiple interests in societies. All people do not benefit equally from a city's transport system, and changes to that system can also change the distribution of benefits, both socially and spatially. Composition and affiliations among groups, individuals, and organisations in particular cities have affected urban transport changes, design, timing, modes, relative attractiveness of public and private transport and non-motorised transport. To transport economists, rent-seekers engage in politics to hinder the "value-free" process of motorisation. To motorisation critics, the automobile lobby and associated corporate interests have facilitated motorisation for their own gain.



## **PERSPECTIVES ON THE DYNAMICS OF URBAN TRANSPORT IN SOUTHEAST ASIA**

### **3.1 Introduction**

While the preceding chapter sketched broad contours of the changing state of knowledge about urban transport in general, this chapter reviews the more specialised literature on recent changes to urban transport in Southeast Asia. With the exception of Singapore, which features prominently in worldwide literature and debates about urban transport, the volume of research and theorising on Southeast Asian cities is far smaller than that pertaining to cities in industrialised nations. Notwithstanding this difference, the body of research reviewed and summarised in this chapter shares numerous characteristics with wider research and debate about urban transport. For example, there are clearly different approaches and positions approximating those in industrialised nations, to explaining the recent dynamics of urban transport in Southeast Asia. Broadly, there are motorisation proponents and critics, and both identify positive and negative features of urban transport in Southeast Asia, and sets of problems and solutions. In addition to being highly normative, they are also highly teleological. The preferred end-states are based on the experiences of cities in industrialised nations.

This literature review assesses how various researchers address this dissertation's central concern, which is explaining the dynamics, and particularly emerging differences, of urban transport systems in Southeast Asia. While this question is not directly examined, the literature which is reviewed offers partial explanations and significant clues, and these form the basis for further investigation. Paralleling the structure of the previous chapter, this chapter begins by reviewing theories which view motorisation (and privatisation of transport infrastructure) favourably. This is followed by a review of the literature which is largely critical of urban transport motorisation and which argues for restraints on motorisation and the promotion of public transport and non-motorised transport in Southeast Asian

cities. The chapter concludes by addressing a shortcoming shared by the literature of both pro and anti motorisation approaches.

In addition to quantitative differences between the broader literature about urban transport and the more specialised literature on Southeast Asian cities, there are qualitative features which distinguish the content of that literature. Not only is there less depth to the research, its breadth is also limited. This chapter reveals some of these differences which provide a rationale for the original research in the chapters that follow.

### **3.2 Motorisation and privatisation**

In terms of volume of work and overall influence on theory and practice, research which accepts increases in private motor vehicles as inevitable and desirable had large influence in Southeast Asia. The profile and influence of this work reflected the involvement of a number of prominent institutions and individuals, including some eminent transport economists.<sup>14</sup> Much of this research was executed under the auspices of multi-lateral development agencies, and particularly by the multi-lateral development banks active since the 1970s in assisting Southeast Asian governments in defining problems and solutions (“agenda-setting”), formulating policies and plans, and financing a range of urban transport projects. These interpretations reflected preferences for individual, motorised mobility, bus-based public transport operated by competitive, privately-owned firms in government-regulated markets, and decentralised, low-density urban forms.

This preference for processes leading to motorised mobility in free market cities which resembled those found throughout much of the USA and other Anglo-American nations, was part of a larger interpretation of industrialisation and development. At the forefront of this interpretation were the World Bank and the

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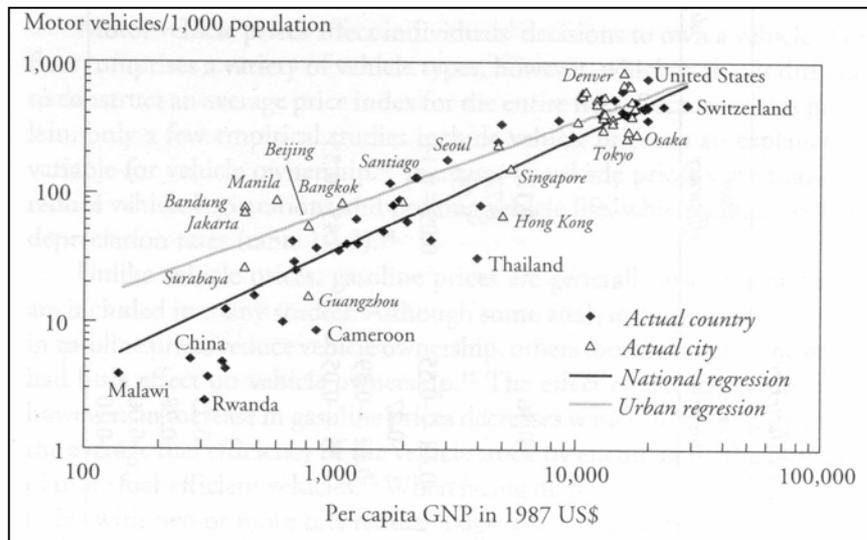
<sup>14</sup> Meyer (*The Urban Transportation Problem*, 1963; *Going Private*, 1993) and Gómez-Ibáñez (*Going Private*, 1993) were members of a team of economists brought by the World Bank and the Singapore government to argue against proposals for a rail mass transit system in favour of busways and expressways. Gabriel Roth, a member of the UK Smeed Committee, which produced a major work on road pricing in 1963 has advised the World Bank and various governments on urban transport for decades.

Asian Development Bank (ADB). These institutions, which were active in nations from a number of global regions in addition to Southeast Asia, focused substantial attention on explaining the economic growth and industrialisation experienced by Southeast Asia's growing market economies (Indonesia, Malaysia, the Philippines, Singapore, and Thailand) in the 1980s and 1990s.

According to transport economists, problems in Southeast Asia's capitals in the 1980s and 1990s were the unavoidable results of successful economic policies based on neo-liberal dictates. This economic growth raised the purchasing power of consumers who used that wealth to buy motorcycles, cars, and more spacious homes. The resulting motorisation was rapid, but corresponded with the overall linear path upwards which is observed in market economies around the world. Motorisation *per se* was not viewed as problematic; in fact, insofar as it represented consumer choice, it was seen as a positive outcome of growing wealth and free market policies. According to this viewpoint, the problems were (and continue to be) the externalities of motorisation which were encouraged and exacerbated by inflexible and interventionist governments unable or unwilling to create the kind of free market conditions under which private firms responding to market signals could have better met the demands of consumers.

The recent growth in motor vehicles in Southeast Asian cities was viewed as consistent with transport economics theory and further evidence of the universal superiority of automobiles and lower density urbanisation. For example, World Bank economists Ingram and Liu (1999) included Southeast Asian cities in analysis demonstrating the positive correlation between car ownership (a proxy for motorisation) and incomes (Figure 3.1). According to this view, consumer choice and free markets led to unilinear change and an inexorable process of urban transport motorisation and urban decentralisation. This process of "progress" led towards motorised and low-density US cities such as Los Angeles and Detroit, which were fully motorised and automobile dependent.

**Figure 3.1 Per capita income and motor vehicle ownership in fifty countries and thirty-five cities**



Source: Ingram and Liu (1999)

Much of the focus of transport economists was on the problems of traffic congestion (viewed as the result of excess demand for road space, particularly during peak periods) in Southeast Asia’s large cities. Numerous reports began with descriptions of the slow motor vehicle speeds in the inner areas of Southeast Asia’s most congested cities, and these motor vehicle speeds were linked to lost time and money. In the 1990s, traffic congestion, which has existed since the introduction of motor vehicles to the central areas of these cities, spread over wider areas along with the rapid growth of urbanised land area, and the periods of peak congestion spread over longer time periods. These problems were, according to these commentators mainly the result of a low ratio of roads to urbanised area:<sup>15</sup>

...stimulated by growing per capita income in urban areas, ownership of motor vehicles is increasing in developing countries at a faster rate than the proportion of central urban space devoted to roads. This proportion is very low in many developing country cities—in the 7 to 11 percent range in Bangkok and Calcutta, for example, compared with 20 to 25 percent in most European cities with fully developed transit systems and more than 30 percent in Manhattan (World Bank, 1996).

<sup>15</sup> Such interpretations have been systematically challenged, especially in Bangkok by Poboon (1997) and are discussed later in this chapter.

An overall lack of road space relative to the number of motor vehicles was identified by the 1975 *Bangkok Transportation Study* as one of the root causes of Bangkok's traffic congestion. Virtually every plan and study of Bangkok's transport since then has reiterated this assessment. In response, the main solution proposed by proponents of motorisation has been to expand road capacity either through physically widening roads and building new roads or through more effectively managing use of the existing road infrastructure. Maintenance and use of existing road infrastructure was the World Bank's initial focus when it cautiously began financing urban transport projects in the early 1970s (Roth and Zahavi, 1981). The World Bank's approach was labelled "low-cost and unconventional" because it recommended making use of existing transport infrastructure rather than financing new infrastructure, which according to the World Bank was the conventional strategy pursued in industrialised nations as well as the strategy preferred by political leaders of Southeast Asian nations (Rimmer, 1988).<sup>16</sup> It was also viewed as unconventional because it differed from the approach of the World Bank which began its operations lending for infrastructure projects for the reconstruction of post-war Europe and Japan. The more recent approach mirrored a shift which occurred in the USA amidst concern over government financial deficits, the oil crisis, and political change. These events in the USA led to a shift in expert opinion:

These broader shifts in political orientation have had a marked effect on policy debate and planning in urban transportation. Most notably, they have led to a dramatic reduction in emphasis on the need for proposed new expressways and rapid transit systems and toward much greater concern with means of improving the utilization of existing highways, with allocating scarce resources among multiple claimants, and with devising low-cost strategies that promise to serve multiple objectives simultaneously. Stated another way, the focus has shifted significantly (though by no means entirely) from high-cost, capital-intensive, facility-oriented strategies toward relatively low-cost, and

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<sup>16</sup> At this time the World Bank was entering a new phase in which its overall approach toward developing nations was labeled and promoted as "pro-poor" and it was also during this period that lending volume grew radically (Bergeson and Lunde, 1999). Previously, the Bank had been primarily concerned with lending for national and regional infrastructure such as regional transport and ports. In Southeast Asia, as with throughout much of the developing world at this time, the market economies were growing, but the availability of capital for development projects was scarce.

particularly low-capital, management and service strategies. Because capital-intensive strategies tend to require long lead times, moreover, and once implemented to be essentially irreversible, whereas management and service strategies are generally susceptible to rapid implementation and easy reversal, there has also been a notable shift in planning orientation from the long term (twenty to twenty-five years) to the short term (one to five years) (Altshuler et al, 1979:6-7).

Similarly, the low-cost approach proposed for developing countries supported small scale, low technology systems and improvements to existing facilities, such as new buses, maintenance, reserved lanes for bus and paratransit vehicles, and better stopping and terminal facilities (Leinbach and Sien, 1989). It was also during this period that road pricing programs were proposed to reduce congestion in central areas and raise revenues for a number of Southeast Asian cities. While road pricing was first proposed by French economist Pigou in the 1920s, it had not been implemented in cities of the Western countries where it was favoured by transport economists.

In the 1970s, the World Bank and transport economists argued strongly against planned and proposed new urban rail investments in Southeast Asian cities, on the basis that the costs to build the systems were too high. Instead, they recommended the use of existing infrastructure, which translated into a focus on roads, because in the 1950s and 1960s, electric streetcar systems had been closed down. Ironically, technical advisors (including economists and planners) from international development institutions had encouraged closing down the existing rail infrastructure just years earlier, because they impeded motor vehicles. This paralleled views found in the Anglo-American industrialised world where rail was viewed as an outdated technology which should be replaced by motorised public and private transport. The World Bank also argued that high speed buses operating on expressways or busways can carry similar numbers of passengers to rail at lower capital and operating costs and they used evidence from Latin American cities to back up these claims. They argued that rail is used primarily by wealthier citizens, thus it doesn't have as great an impact on improving conditions for the poor, and that the large initial capital costs place too large a burden on the perennially cash-strapped governments of developing nations (Dimitriou, 1992).

Another argument was that by financing road and rail facilities, governments were subsidising higher income groups while reducing accessibility for the poor because the new high-capacity modes cannot easily penetrate the narrow lanes of low-income residential areas (Leinbach and Sien, 1989). This was emphasised in the World Bank's 1996 transport strategy which "...discouraged the use of subsidies, lauded the virtues of competition and minimal regulation, and questioned the value to the poor of capital intensive projects which were frequently not cost-effective in countries with limited resources" (World Bank, 2002). Economists such as John Kain, a co-author of *The Urban Transportation Problem* (Meyer, Kain, and Wohl, 1965), and colleagues proposed high-speed bus-based public transport systems which utilised highway networks for private motor vehicles in Singapore, Seoul, Houston, Boston, Bogotá, and Tehran (Kain, 2001).

In addition to encouraging small scale improvements to an essentially road-based urban transport system, neo-classical economists have supported private over public ownership and operation of transport in Southeast Asian cities. Private ownership of urban transport has been encouraged as preferable to public ownership, on the basis that small, competitive, and responsive entrepreneurs, and greater employment opportunities, would be created by privatisation (Leinbach and Sien, 1989). The disdain of transport economists for urban rail systems was accompanied by a wariness of government operation of bus-based public transport. Accordingly, it was suggested by transport economists that the problems of congestion, air pollution, and other externalities were compounded by the poor management and lack of market-responsiveness of government bus monopolies. These results of heavy-handed government intervention were claimed to have actually facilitated motorisation and traffic congestion which in turn reduced bus speeds in a "vicious circle" of decline:

The failure of public transport to meet the needs of travelers has intensified the demand for private cars, and the failure to meet the resulting demand for road space has led to pervasive congestion and to the movement of important activities out of city centers (Roth, 1991:471)

In addition, government fare controls limit the quality and quantity of public transport service, which is thus overburdened and declines in quality (Gwilliam, 1997). A prime example was Bangkok, where the government held fares at a level below the costs of operating the services while at the same time refusing to subsidise the services. Economists such as Roth disagreed strongly with the view that regulation and greater formalisation could improve public transport in the cities of the developing world, on the basis that:

This is the solution that has been attempted, with disastrous results, in most industrialized countries, where big, empty buses, protected from competition, cruise in solemn majesty, to serve the interests of their operators rather than those of their would-be passengers. ... It can be argued that it is the lack of free markets in urban transport that make it work so poorly in the west, and that it is more freedom, and not less, that is required for the development of the Third World (Roth, 1991:472).

The persistence of informal modes of public transport operations in the cities appeared to be providing a countervailing trend (Rimmer, 1986) and was used as an example of the inefficiency of government monopolies and the latent entrepreneurship in developing cities. The informal transport sector was comprised of small scale enterprises which were established without contractual relations and licensing. Cervero (1997) argued that competitive informal sector operations in Southeast Asian cities could provide a model for incipient paratransit services in the USA. The World Bank celebrated the flexibility and entrepreneurialism of minibuses (which were established with World Bank assistance) in Kuala Lumpur and motorcycle taxis in Bangkok where they served as highly competitive (among operators) responses to the demands of consumers. The local responses of informal operators providing “gap-filling” transport services are seen as a result of the poor public services (Cervero, 2000). However, Cervero (2000) also noted that while seemingly “competitive”, Bangkok’s motorcycle taxis and minibuses are actually competitive only at the level of individual operators, and that local “bosses”, politicians, and military officers controlled routes and exacted rents.

In spite of the preferences of many economists and institutions such as the World Bank, during the 1980s an “undeniable trend towards modern, high-technology urban transport” emerged in Southeast Asia, “...carrying along with them the tendency for national governments to absorb private sector urban transport operations, and to tighten the screws on private ownership by increasing state regulation and scrutiny” (Roschlau, 1989:413). Notwithstanding successful implementation of road pricing in Singapore and World Bank-supported road enlargements, bus lanes, and minibuses in Bangkok and Kuala Lumpur, government policies in the developing nations at the time were shifting away from many economists’ preferences, and toward more capital-intensive modes and technologies such as rail and toward greater incorporation of informal and small scale operations by state enterprises (Rimmer, 1986). In the view of some supporters of the unconventional approach, Southeast Asian governments were mimicking Western and Japanese cities by forcing out small-scale operators and that this would lead to greater inequity and less free markets.

Paradoxically (at least in the view of free market economists) this shift toward greater public involvement in urban transport in Southeast Asia was occurring during a period in which privatisation of urban services was being promoted in the developed world. In the 1980s, the rise of conservative political parties and leaders in the USA and UK championing privatisation of previously publicly-owned and operated urban services paralleled a shift in the focus of economists’ ideas about urban transport and the activities of multi-lateral development institutions in the sector.

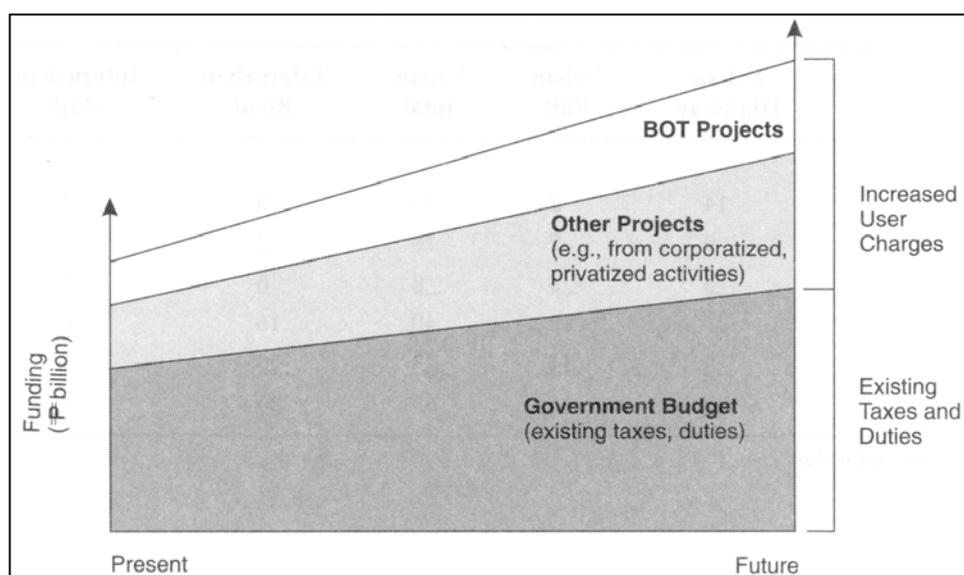
In order to relieve what were frequently referred to as “infrastructure bottlenecks,” it was recommended that private finance of urban transport infrastructure be pursued through measures such as Build-Operate-Transfer (BOT) contracts.<sup>17</sup> The

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<sup>17</sup> The BOT is a model for the development of new transport infrastructure. A concession to build and operate the project is awarded by the government to a private company in exchange for the right of the company to charge for the use of the facility for a fixed period of time, after which the infrastructure is turned over, or transferred, to the public authority.

role of the government should be as “organiser, customer, and regulator, rather than direct supplier” of urban transport infrastructure and services (Gwilliam, 1997). The ADB argued that government-led involvement in transport infrastructure planning, implementation, and regulation led to “ineffectiveness and under investment”, and that “markets” should be given the responsibility for setting “the transport agenda of tomorrow to meet the diverse and changing needs of consumers and producers” (Allport et al, 1998) (Figure 3.2). The ADB financed a high-speed expressway to be built and operated by a private consortium in Bangkok, while they also financed planning for public feeder roads. In 1996, the ADB provided a technical assistance grant to Thailand’s Public Works Department of the national Ministry of Interior for a *Distributor Road Study* (Trans-Asia Engineering Associates et al, 1996) which argued that a major cause of congestion in Bangkok was the “virtual absence” of secondary, distributor roads. The study proposed a comprehensive network of primary and secondary road infrastructure as the basis of an urban development strategy and recommended changes to the land development process which would ensure that land development and roads were coordinated (Trans-Asia Engineering Associates et al, 1996).

**Figure 3.2 Proposed changes to funding transport**



Source: Allport et al (1998)

Again, this emphasis reflected political and economic circumstances in the Anglo-American nations, and was ideologically-driven rather than being based on an accurate assessment of the actual conditions in Southeast Asian cities. While often touted as a major change, this shift toward the private provision of infrastructure in Southeast Asia simply grafted the renewed focus of economists on privatisation on to their inherent preferences in urban transport for motorisation, mobility, and private ownership. Nor was it new to Southeast Asian cities, where unlike in the earlier industrialised world there was not a strong tradition of public provision of infrastructure and services. It also was entirely consistent with the World Bank's mandate of encouraging economic growth based around regulated markets and corporate institutions.

While governments throughout Asia pursued privatisation in the urban transport sector, by the mid 1990s major problems surfaced. The experience in much of developing Asia between 1985 and 1996 suggested that attaining the goals of privatisation via the BOT method were extremely difficult and that many projects failed to achieve the intended aims (Handley, 1997). The regional economic crisis that began in mid-1997 highlighted problems with the conventional BOT approach in Southeast Asia (Lockwood et al, 2000). One problem was that it depended on foreign capital, but when global capital flows in the region dropped off, a number of projects under construction and planned were abandoned. Also, where government coordination was lacking, the private projects did not necessarily contribute to a well-functioning transport system. Related to some of the problems precipitating the wider crisis, it was revealed in the wake of the crisis that private urban transport infrastructure concessions were given out in accordance with political patronage and the influence of "special interest groups" (Menckhoff and Zegras, 1999). Even among the largely pro-motorisation and pro-privatisation transport economists, the experience has led to a more cautious approach, which is evident in recent studies by the Asian Development Bank (2000) and the World Bank (2002).

In addition to the problems associated with the finance of private transport infrastructure projects, the mounting environmental costs of motorisation led to some questioning even within the World Bank of motorisation. This questioning has, however, had its critics. The mere suggestion in a World Bank study that motorisation should be held back drew scorn from one ardent supporter of motorised mobility. Richardson, a member of the World Bank research advisory staff, exemplified the concerns of many neo-classical economists over restraining motorisation in his comments on a World Bank study on motorisation:

Slowing down motorisation is simplistic and would probably have limited impact. The price elasticity of demand among the rich is probably low; they will buy and use cars regardless. There is a case for making motorists pay the full costs of driving, including significant externality taxes. This approach will definitely slow the percolation of automobile ownership down the income scale. But it is both elitist and arrogant for rich countries, especially the United States, to tell developing countries that they should forgo the benefits of the automobile; urging a motorisation policy comes dangerously close to such a position. Arguing for the elimination of automobile subsidies is much safer and less provocative than a fully fledged motorisation deceleration policy (Richardson, 1999).

“Making motorists pay the full costs of driving” or “getting the prices right” are viewed as the means by which “environmental and ecological sustainability” should be addressed, in an “economically realistic way” according to World Bank Economic Advisor Gwilliam (1997). In particular, fuel prices should carry the burden of covering road use and environmental costs as well as direct resource costs (Gwilliam, 1997). This has been reflected in the approach of a recent programme intended to address air pollution, a major problem linked with motorisation in Southeast Asia. In 2001 the World Bank, together with the ADB, the government of Japan, and the Ford Motor Company, launched the Clean Air Initiative for Asia, and continued to support specific air quality management programmes in Bangkok and Manila. This programme by the World Bank and related institutions is still consistent with the acceptance of motorisation as inevitable and desirable, while acknowledging that significant environmental problems have resulted and should be addressed. The Clean Air Initiative replicates a programme from Latin America and proposes that the way to reduce

air pollution in cities is through technical “air quality management” measures to modify fuels and vehicle emissions, and to implement programmes such as vehicle inspection and maintenance. According to the World Bank, this strategy has been successful at reducing air pollution in Latin American cities, but it originates in measures to improve air quality in California’s motorised cities such as Los Angeles. The involvement of motor vehicle companies is justified on the basis that “...cleaner air will primarily be the result of cleaner fuels, cleaner engines, retrofits to existing vehicles, and cleaner technologies applied to energy generation and industrial plants – solutions that can only be provided by private sector companies committed to the common goals of cleaner air” (Bigio, 2001). Reducing motorisation and encouraging public transport or non-motorised transport are not considered as a means of reducing air pollution by this programme.

Recently, the World Bank prepared a new document, *Cities on the Move: A World Bank Urban Transport Strategy Review* (2002), intended to guide the Bank’s activities. Southeast Asian cities featured prominently in the report, which suggested why Singapore had been successful, while other Southeast Asian cities remained mired in a malaise of traffic congestion and air pollution, with no end in sight. Also examining Singapore for the World Bank was a recent study which explains why Singapore had been so successful in urban transport (Willoughby, 2000). The paper emphasised the implementation of pricing measures to allocate scarce road space and to generate revenue for governments. Willoughby (2000) argues that “the most useful fundamental idea that emerges from the Singapore story” is that a pricing scheme can be used to raise revenues for the expansion of services, especially for the poor (Willoughby, 2000:28). The only successful implementation of the concept in the world began in 1975 when Singapore’s government initiated an Area Licensing Scheme (ALS) which charged for entry into the congested roads of the central area during peak periods. Willoughby (2000) argued that while imperfect, rationing of road space (by pricing schemes) acted as motorisation restraints which had no major negative side effects on economic growth or the improvement of social welfare. The development of a rail

system (against World Bank advice) was mentioned but was played down as a success factor. Willoughby notes that taxi cars, a form of motorised transport intermediate between the private car and the public bus, carried as many motorised trips per day as the MRT, and that buses carried three times as many trips per day as the MRT.<sup>18</sup> The finance of Singapore's urban transport infrastructure, which is paid for entirely by the government, is largely ignored.

According to economists, the question of why road pricing and other rational, technically-sound measures were implemented in Singapore but not in other Southeast Asian cities was explained by politics. Underlying the conception of politics was the economics concept of politics as rent-seeking. The World Bank and transport economists attributed this to Singapore's centralised leadership, which they viewed as insulated from politics and relatively autonomous from vested interests and rent-seekers. As a result (according to the World Bank), the Singapore government was able to implement a policy which was "rational" and reflected true cost pricing of a scarce resource. This interpretation implied that other governments would be free to pursue such economically rational policies if governments could achieve similar levels of autonomy. The shortcomings of urban transport in Southeast Asia's cities (except Singapore) were viewed as the results of rent-seeking behaviour and the lack of vision and institutional capacity. The barrier to implementing the correct policies was viewed as rent-seeking or more broadly, "politics". The World Bank's new urban transport strategy implies that it is Singapore's<sup>19</sup> insulation from rent-seeking which has been the key to success:

Too often ... bad investments have been made, and serious urban transport issues trivialized, by the political process. Cities that have exhibited good transport planning and management, such as Curitiba

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<sup>18</sup> 1995 data from Kenworthy and Laube (2001) indicates the number of MRT trips was 2% higher than the number of private taxi car trips, although these figures pre-date extensions to the MRT and the more recent opening of an LRT line, which have likely boosted rail patronage and mode share.

<sup>19</sup> Reference is also made to Curitiba, a state capital in southern Brazil. Like Singapore, Curitiba in recent years captured the attention of urban transport planners as a place where innovations have set the transport and urban system in a class above other cities in its region. Transport economists appear to like the bus-based mass transit system which overcomes what they see as the fundamental problem of rail, the large fixed expenditure, while not interfering with the overall system of motorised movement.

and Singapore, have often developed under strong leadership and have been founded on a high level of technical and professional competence in the planning function. The question is how to reconcile coherent technical vision with decentralized and fragmented democratic processes (World Bank, 2002:xxi).

The problem according to this view was politics, or the way that special interests compete for privileges. They viewed political processes with suspicion, as ways through which vested interests engage in uncompetitive behaviour to secure personal gains.

### **3.3 Restrained motorisation**

Theoretical interpretations critical of urban transport motorisation in Southeast Asia evolved out of critiques of widespread motorisation and automobile dependence in cities of North America, Australia, and much of Western Europe. While researchers first studied the negative impacts of motorisation in these developed nations in the 1960s and 1970s, in the 1980s and 1990s alarm spread as motorisation began accelerating throughout the cities of much of the developing world. A major concern was that while they were seeking to reduce motorisation in the largely automobile dependent cities in much of Western Europe and North America, motorcycles and cars were beginning to flood cities, particularly in the large and rapidly growing metropolises in Southeast Asia, China, and India. Because of the massive size and growth of these emerging metropolises, there would be global consequences. Furthermore, recognition grew that motorisation in these places was incurring large local environmental impacts and other social costs and financial costs in cities with relatively large low-income populations. As in Western cities, the normative preferences of those researchers articulating this interpretation are for limited or restrained motorisation, and high levels of public transport and non-motorised transport usage.

There is, in addition, an underlying argument that while extensive growth in motorisation is possible, there are absolute environmental or physical limits to the amount of motorisation that cities can accommodate while maintaining a high quality of life. Grounded in ideas of finite natural resources and preservation of

local and global environments, much of this interpretation is based on international comparative analysis of the physical, built and natural characteristics of Southeast Asian cities. It is found that like other cities in Asia, Southeast Asian cities have population densities which are high in international comparison, and are growing very large in absolute terms. As a result of these physical characteristics, according to Barter (1999), the potential for the expansion of automobile use in East and Southeast Asian cities is limited at present and possibly for the foreseeable future, as it would be impossible for physical decentralisation to occur on the scale required to accommodate full motorisation as in a city like Los Angeles. Very low population densities are possible in large cities only if private cars dominate the transport system and conversely, very dense cities cannot cope with large numbers of automobiles (Barter 1999). The implication is that low occupancy cars, the most space-consuming mode of urban travel, are inherently unsuited to high density cities. In US cities where the automobile dominates, average urban density is only 15 persons per hectare which is 14 times less than that of Manila, the highest density city in Southeast Asia.

The critics of motorisation generally disputed that Southeast Asia's urban transport problems could be solved by expanding road capacity. Whilst expanding road space may theoretically have provided a better basic road structure or hierarchy, they argued that it did not address the more fundamental issue of high rates of trip-making by private transport. Solutions of this nature are also subject to the perversity that by making road traffic conditions more attractive, more trips are made by private transport and congestions remains similar or worse. For example, Poboorn (1997) and Barter (1999) found that while relatively low in international comparative standard, Bangkok's road area was similar to that of other high density cities in Europe and Asia which in some cases (e.g. Barcelona, Hong Kong, Tokyo) had not become traffic disasters. In particular, they objected to the implication that densities should be decreased and road area increased to accommodate motorised modes of transport. Poboorn and Barter viewed road area as facilitating motorised transport and questioned whether it was actually lack of road space, or lack of public transport and opportunities for non-motorised

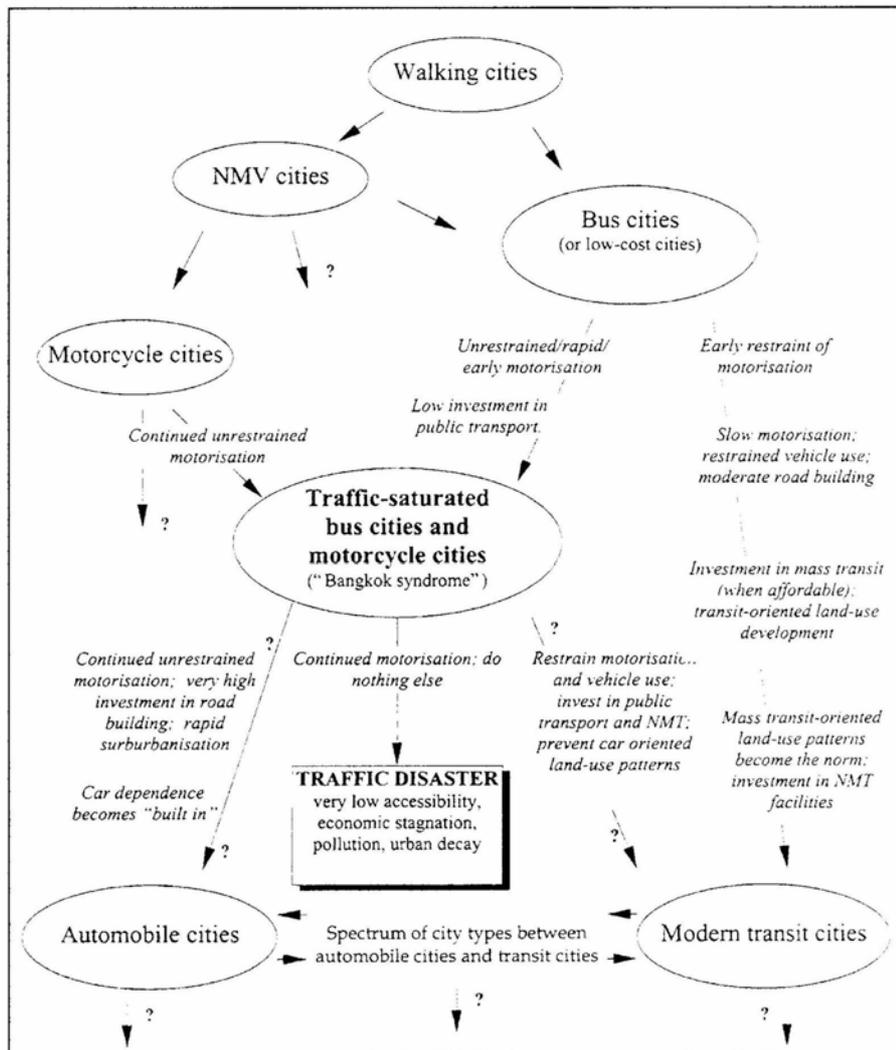
transport in a densely populated context which were the inherent problems. While acknowledging the relatively low provision of roads, they argued that by committing to trying to increase roads Bangkok would be pushed further down an inherently unsustainable path.

In spite of these physical limits to motorisation, and to the disdain of advocates of restrained motorisation, in recent years motorisation throughout much of Asia was rapid. According to the motorisation critics, this massive growth in motorised travel in the capital cities of Southeast Asia's emerging market economies was at the root of traffic congestion and air pollution problems which were the focus of numerous academic studies and consulting reports. The high density of Southeast Asian cities also made air pollution problems particularly acute because emissions of pollutants from transport per urban hectare were high, meaning that emissions were spatially concentrated (Kenworthy and Laube, 1999). The average spatial emissions levels of some of these pollutants were over three times the levels in the "wealthy Asian cities" (Hong Kong, Seoul, Singapore, Tokyo). Density and other physical features of these cities constrained expansion of motorisation but also created conditions for high concentration of problems or external costs such as air pollution, from even modest increases in motor vehicle traffic. As a result, expansion of road-based private transport impacted on large numbers of individuals and households, even when there was a relatively low level of overall vehicle ownership. While problems of poorly maintained diesel vehicles and two-stroke engines prevalent on motorised two-wheel vehicles throughout much of Southeast Asia were acknowledged (Barter, 1999), these were considered as incidental to the wider problem of motorisation. Barter found that attempts to accommodate motorisation created massive social costs or externalities in Asia's densely populated urban areas, which were extremely vulnerable to becoming saturated by motorised vehicles, and outweighed any purported benefits of motorisation. The problem was that quality of life suffers as a result of the open-ended accommodation of motorisation.

As described in the previous chapter, motorisation critics questioned the link between wealth and motorisation and they cited extensive evidence from Asian cities. However, while the transport economists promoting motorised mobility viewed this as an inevitable process converging on low density, car-dependent forms, the sustainable transport advocates promoting restrained motorisation suggested that wealth was not highly correlated with motorisation when Asia was examined as a region. Kenworthy and Laube (1999) analysed motorisation levels in East and Southeast Asia and concluded that developing Southeast Asian cities (Bangkok, Jakarta, Kuala Lumpur, Manila, and Surabaya) were in total becoming more reliant on car and motorcycle use than the far wealthier cities of Hong Kong, Singapore, and Tokyo (Kenworthy and Laube, 1999).

In spite of the apparent prosperity in cities where motorisation was restrained, studies indicated that not all Southeast Asian cities were following the successful examples of the cities in the NICs. Newman and Kenworthy (1999) argued that car ownership and use in Singapore were much lower than the city-state's GDP would suggest. Barter identified a model of different trajectories of urban transport and land use change in developing nations (Figure 3.3). According to this generic model, as cities evolved in the developing world in the latter twentieth century, they moved toward becoming either "automobile cities" or "modern transit cities". In terms of changes to transport and land use characteristics, since 1970, Kuala Lumpur and Bangkok followed "a fundamentally different path in their transport development from Seoul, Singapore, Hong Kong and Tokyo" (Barter, 1999:337). These two upper middle income cities were not simply at earlier stages of a path similar to that taken by the higher-income cities, but were developing in a way distinctly more oriented toward private, motorised transport. He found that this private-oriented transport development in such densely populated cities was at the root of what he described as a crisis facing the cities. The density was such that the social, environmental, and financial implications of accommodating such an increase in traffic made it infeasible in the long term. Kuala Lumpur, which was the lowest density large city in Southeast Asia, had become the most automobile dependent city in Asia. Bangkok, which was

**Figure 3.3 Model of urban transport and land use change in developing nations**



Source: Barter (1999)

relatively high density and lower income than Kuala Lumpur, became a “traffic-saturated bus and motorcycle city” (Barter, 1999). Barter concluded that although Jakarta, Manila, and Surabaya were lower income and less industrialised than Bangkok and Kuala Lumpur, these cities appeared to be on their way to becoming traffic-saturated, bus and motorcycle cities due to transport priorities and policies which favoured private motorised transport (Barter, 1999).

Based on a quantitative comparison of the wealthy, less car-dependent cities and the poorer, more car dependent cities, Kenworthy and Laube (1999) and a number of others concluded that the differences were attributable to government

intervention in the form of land use and transportation policies: "...where wealth is accompanied by land use and transportation policies which do not facilitate car travel, car use will be lower" (Kenworthy and Laube, 1999: 617). Similarly, Barter concluded that government policies, strategies and choices explained differences between the transport systems in various cities; in particular, government decisions and policies to restrain private vehicles led to different outcomes. The negative impacts of motorisation in densely-populated cities were averted in the wealthier NIC cities by policies and plans to restrain or discourage the use of motor vehicles. These policies were broadly categorised as transportation demand management, motor vehicle restraint, land use policies, and development of public transport, rail, and non-motorised transport infrastructure.

Kenworthy and Laube argued that substantial short and long term benefits accrued from implementing policies and plans which promoted the use of public transport, and particularly rail mass transit; by contrast, increasing automobile use led to diseconomies. Urban rail overcame the problem of urban air pollution because the power supply was generated outside of the city and it used much less per person. The rationale for creating new rail mass transit infrastructure was that it generated significant benefits which outweighed the costs, which included the large, "up-front", capital expenditure required for rights-of-way, civil works involved in construction, and rolling stock. They also linked urban rail to increased use of non-motorised modes of transport, which are the most environmentally sustainable, and to a general increase in the quality of life of the city. Rail had high internal costs but generated significant external benefits.

In particular, Singapore's urban transport was held up as exemplary, and the city state was advocated as a case study "in overcoming automobile dependence" (Newman and Kenworthy, 1999). While transport economists have focused on road pricing and economic instruments and the government's autonomy from rent-seekers or special interests as central to Singapore's success, the proponents of restrained motorisation placed greater emphasis on the interventionist policies implemented by Singapore's government. These included not only road pricing and vehicle taxes, but also land use policies and plans and the development of rail

and non-motorised transport infrastructure. Among many critics of motorisation, Singapore was extolled as a successful model for cities around the world. Advocates of less motorisation and more public transportation (particularly rail) looked favourably on Singapore's restrictions on car ownership and usage, integration of rail with housing and commercial activities, and more recently improvements to pedestrian and cycling facilities (e.g. Barter, 1999; Cervero, 1998; Newman and Kenworthy, 1999; Poboan, 1997; Zuckerman, 1991). The proponents of restrained motorisation for Southeast Asian cities viewed Singapore's economic instruments which curb the ownership and use of private cars in slightly different terms from economists.

Zuckermann (1991) cited Singapore's Area Licensing Scheme as one example of a measure to control and reduce the number of cars on the road, and as a result, a means of environmental improvement. However, Zuckermann's assessment of the rationale for Singapore's road pricing differed from that of the economists who proposed and designed the measure which was intended to speed up movement of motor vehicles and reduce traffic congestion. Thus, there was agreement over the means employed but disagreement over the ends being pursued. Barter (1999) argued that in Singapore (as well as in Hong Kong, Japanese and Korean cities) restraints on ownership and use of motor vehicles were in place at an early stage of economic development and industrialisation, before automobile ownership levels reached 7 vehicles per 100 persons, and that these measures were the key to understanding the differences between the NIC cities and the cities in Southeast Asia's emerging market economies. This early restraint on motorisation allowed a "space" for the development of better public transport and assured a healthy market for these systems because the majority of people were not developing private transport habits.

In contrast to restraint measures, others emphasised the basis of Singapore's success as government-planned, high-density urban development that was closely integrated around a rail-based public transport system (e.g. Newman and Kenworthy, 1999). Similarly, Cervero (1998) argued that Singapore was a model

of a “transit metropolis”, a region where a workable fit existed between transit services and urban form, and that the city represented a case of sustainable regional development. Cervero classified Singapore as an “adaptive city” in which rail investment guided urban growth in pursuit of larger societal objectives such as preserving open space and producing affordable housing in rail-served communities. The approaches looking at land use also emphasised the role of rail mass transit infrastructure in linking housing development directly to the public transport system. The experience of Singapore was interpreted as similar to that of Tokyo, Hong Kong, and Seoul, where public transport was improved with the construction of high quality rail-based systems. In contrast, in Bangkok, Jakarta, Kuala Lumpur, Manila, Surabaya, the car was allowed free reign, extensive new high capacity road systems were built to accommodate ever increasing traffic volumes, and single use residential housing estates were built on the outskirts of the metropolitan areas.

The emphasis on rail was also found in research by predominantly Japanese researchers comparing the experience of Southeast Asian cities with those in Japan. In a comparison of the influence of economic factors on urban transport, Hayashi et al (1994) analysed motorisation, GRP, and a number of other factors in London, Tokyo, Nagoya and Bangkok. They observed that during a period of low (but growing) per capita GRP, car ownership changed “linearly with the per capita product” and the relationship in Bangkok was consistent with those in the other three metropolises. However, by 1988 (year of the data) it was apparent that car ownership in Bangkok was higher than the other cities, and if motorcycle ownership was taken into account<sup>20</sup>, the motorisation level in Bangkok was approximately 30% higher than in Tokyo and Nagoya at a similar economic development level. What Hayashi et al found particularly surprising was the high ratio of car prices to average annual income: the 1989 ratio in Bangkok was about 10 times that of Tokyo and Nagoya in 1972.<sup>21</sup> In 1992, the number of new car registrations rose 85% over 1991 levels (Ibid.). Hayashi et al concluded that an

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<sup>20</sup> The number of motorcycles were converted into passenger car units.

unusually high level of car use in Bangkok was caused by a lack of radial rail mass transit and by poor bus services which forced people to rely largely on private cars. In this respect, the findings concurred strongly with Newman, Kenworthy and colleagues: cities at relatively low incomes and without competitive public transport or viable non-motorised transport, were “forced” into prematurely high levels of vehicle ownership, which exceeded that of cities with far higher incomes or GDP per capita. Rimmer (1988) argued that in Singapore a Tokyo model was being pursued.

While these critics of motorisation and advocates of rail interpreted Singapore’s success as the result of good government policies and plans and a large role for public sector institutions, the highly motorised cities such as Bangkok were characterised as having poor policies and plans. In Singapore, Tokyo, and Hong Kong, it was argued by these authors that car use was controlled through government measures of economic and physical restraint. Conversely, in the lower income cities “...the traditional non-motorised ... are being increasingly squeezed out of the transportation system through road widenings and hostile public environments” (Kenworthy and Laube, 1999:531).

Poboan (1997) argued that Bangkok’s transport problems stemmed from the application of “Western” Urban Transport Planning (Chapter 2), which led to a bias towards roads and motorised transport which was inherently ill-suited to Bangkok’s physical urban structure. Poboan found that the space required to accommodate full, functional motorisation in Bangkok was so large as to be beyond the realm of reasonable possibility in the foreseeable future. He also identified a “mistaken belief” among planners and politicians that Bangkok’s traffic congestion was rooted in an inadequate supply of road space and incomplete road hierarchies. Poboan identified the roots of Bangkok’s transport problems in the physical structure of the city, which was too dense for a motorised transport system. However, an inappropriate Urban Transport Planning process

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<sup>21</sup> This study was based on data only up until 1990: the highest growth rates occurred in the early and mid-1990s, in particular, immediately after the government in 1991 lowered duties on imported vehicles from 300% to 20-60% (Strickland, 1993).

had been applied in Bangkok and resulted in a substantial amount of road building which further aggravated transport-related problems because it failed to address the more fundamental structural problems. Poboorn concludes (1997:391) that the urban transport planning process described by Dimitriou shaped urban transport in Bangkok by facilitating construction of road infrastructure while institutional fragmentation hindered public transit and non-motorised transport projects.

This assessment of Bangkok's problems drew on the work of Dimitriou (1992) who argued that American Urban Transport Planning was applied throughout the developing world and exacerbated existing urban transport problems or created new transport problems by encouraging motorisation. The solution identified was the reform of policy-making and planning and the institutions that carry out this work, and he proposed a "developmental approach" for Indonesian cities. Hook, the director of an NGO, the New York-based Institute for Transport and Development Policy (ITDP), criticised the World Bank on the basis that it did not promote low cost modes, but promoted highways.<sup>22</sup> Hook (1994) argued that this bias was built into the purportedly technical and ostensibly value-free models used by the World Bank to assess projects. Similar to Hook's criticism of World Bank assessment procedures was Dimitriou's (1992) examination of professional practice which showed that a standardised, technical urban transport planning process, with quantitative techniques, was developed in the USA and exported (by multilateral development banks and transport planners) to places where it was inappropriate. The result was encouragement of higher levels of motorised vehicle use and the adoption of inappropriate, complex technologies in the cities of developing countries.

Kenworthy et al (1995) suggested that Bangkok and Manila could "learn" from other Asian cities, which "...have shown some of the best examples of how increasing wealth can be used to make much less automobile dependent cities"

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<sup>22</sup> The ITDP was set up to promote environmentally sustainable and equitable transportation policies and projects worldwide. "ITDP was organized by leading advocates for sustainable transport in the US who realized that the US was exporting its model of automobile dependence to developing countries .... ITDP chose to focus on counteracting this development" ([www.itdp.org](http://www.itdp.org), 8 April 2002).

(1995:66). What was implied is that ignorance or mistakes of the alternative policies was the answer why these cities pursue inappropriate paths which led to environmental degradation. To Barter and Kenworthy (1997), motorisation in Southeast Asia was a mistake that confused, misguided, or ignorant governments would discover in the future, and would seek to reverse. However, they warned that by that time it may be too late as motorisation would have already been “built-in” to the physical form of the city. Similarly, Dimitriou (1998) suggested Singapore’s successful economy and urban transport system were linked to a high value being placed on environmental quality and sustainable development, but in contrast, Bangkok “turned its back” on the sustainability debate. However, these explanations raised questions about why “Bangkok” (as an entity) would turn its back on obvious success. Numerous Thai Prime Ministers, Bangkok governors, cabinet ministers, planners and bureaucrats have made pilgrimages to witness and learn about Singapore’s rail system and road pricing.

In contrast to the approaches which suggested that a lack of knowledge and inappropriate planning models and techniques were to blame, there were other explanations which focused on the difficulties in Southeast Asia of implementing what were viewed as essentially good, appropriate policies and plans. These were viewed as emphasising essentially good policies because they stressed transport demand management, motorisation restraint, and the development of alternatives such as rail mass transit and non-motorised transport which had less environmental impacts. There were many examples of this approach carried out on Bangkok, where decision-making departs notoriously from public policies and plans. Daniere (1995) started from the position that “excellent planning and policy recommendations” were made for Thailand’s government, but that these were not implemented due to land acquisition issues, overbidding, lack of qualified staff, lack of financial expertise, and a lack of common purpose among a myriad of agencies involved in transportation planning and construction, and finally “by the Thai government’s lack of ability to enforce long-term solutions, especially those which require sacrifice on the part of the elite” (Daniere, 1995:20). Du Pont and Egan (1997:25) suggested that the “basic barrier” to reforming institutions and

implementing policies in Bangkok was the inability "...to develop a political consensus that will permit the implementation of a coordinated set of policies to deal with the problems". Similarly, institutional fragmentation was emphasised in many consultants' reports and research on Bangkok (Daniere, 1995; du Pont and Regan, 1997; Poboorn, 1997).

Tanaboriboon (1992) sought to explain why transport demand management measures were successfully implemented and operationalised in Singapore but not in Bangkok. He suggested that a proposed road-pricing scheme for Bangkok, agreed to in principle by the national government, was never implemented because of fear of strong opposition and government unpopularity. Other, less dramatic measures such as prohibiting on-street parking, were not implemented due to a lack of policemen and the inability of the police to enforce regulations was mentioned. Similarly, Pendakur et al (1989) suggested that an Area Licensing Scheme similar to that in Singapore was studied extensively by the World Bank for Bangkok and Kuala Lumpur, and financial support from international agencies was available to implement the project, but it was not implemented because of opposition from the business community and car users. They suggested that these governments lacked "political will" and that public knowledge that the system would be enforced without exemption would have been a key to its implementation. Ang (1993) suggested that public education and campaigns were essential in persuading the Singapore public of the benefits of transport demand management. Overall, the most important factor behind Singapore's success with transport demand management according to Tanaboriboon, was "the government's perspective and willingness to withstand unpopularity and opposition from local commuters as well as dissenting politicians" (Tanaboriboon, 1993:65). Similarly, Hall (1983) argued that in Singapore (and Korea) mechanisms for policing implementation of plans and for monitoring and penalising deviations from plans were weak or non-existent, and "political will" in pursuing the implementation of traffic limitation plans was the key to success. Tanaboriboon (1993) exhorted Thailand's elected government to be "decisive" and "free from politics" in order to implement demand management strategies that

would address the problem of limited road space which is unable to cope with the ever increasing demands for automobile travel. Many of these theories which examine implementation problems used similar concepts to the World Bank and transport economists who suggested that politics (which in this view is similar to rent-seeking) was to blame.

### **3.4 The question of interests**

Regardless of opinions or predispositions toward motorisation, rail development, or other urban transport issues in Southeast Asia, there were some common features of the reviewed literature. One of these features was the relative absence of critical perspectives researching and identifying the beneficiaries of changes to urban transport in Southeast Asia. This absence was particularly evident when comparing the literature on urban transport in general in Chapter 2 with the material in this chapter. Another feature of the literature on Southeast Asian cities was that there was widespread acknowledgement that observed processes diverged widely, in virtually every case other than Singapore, from the idealised and prescribed processes. There were some suggestions that rent-seeking, politics, and political will, all ideas about interests, played a role in the observed dynamics of Southeast Asia's urban transport.

According to mainstream transport economists and urban transport specialists carrying out research for institutions such as the World Bank, processes leading toward the ideal of competitive, free-market, and decentralised cities were subverted by rent-seeking. While “the political process” was identified as problematic, specific analysis of rent-seeking was lacking. Exceptions were some recent works assessing the poor performance and problems of many private urban infrastructure projects in Southeast Asia. For example, Menckhoff and Zegras (1999) suggested that political patronage and special interest group influence interfered with the accomplishment of the goals of infrastructure privatisation in cities, particularly in Bangkok. The ADB, in a recent review of “best practices” (reflecting the technocratic belief in the existence of technically-correct solutions to problems which can be discovered by experts) for promoting private sector

investment in infrastructure took a more sanguine view of past performance and future prospects. Nonetheless, various interests were identified as “motivations and attitudes of the key players”; notably, the identified interests of “community groups” included “power of the anti-toll and anti-car lobby” (Asian Development Bank, 2000:20).

The motorisation critics and advocates of restrained motorisation also identified idealised processes, although in this case they led toward prosperous cities where motor vehicles were restrained. Much of this research suggested that while Singapore was successful, inappropriate planning techniques (such as UTP and World Bank project assessments) and inadequate knowledge among decision-makers led to mistakes rather than learning from the cities with restrained motorisation. These assertions raised a question: Why was an inferior path of motorisation followed if physical conditions were conducive to low car use, and if extensive economic, energy, air pollution, fatalities, safety, and greenhouse benefits would have accrued from promoting public and non-motorised transport? In addition to technical errors and a lack of knowledge, a few critics of motorisation suggested that some wealthy and powerful people benefited from unrestrained motorisation in Southeast Asian cities.

Hook and Replogle (1996) attributed Jakarta’s decline in non-motorised transport and rise in motorisation to the small scale *becak* industry’s lack of political connections, compared to motorised transport which was dominated by big businesses with connections to the Presidential family. Also referring to the Indonesian context, Barter (1999) suggested that the involvement of three of Indonesian President Suharto’s children in vehicle manufacturing and toll roads lowered the prospects for any serious restraint of vehicle ownership while he remained in office. He also acknowledged that national industrialisation policies promoting motorcycle and car manufacturing in some Southeast Asian nations may have influenced urban transport policies and planning and discouraged restraint of motorisation. In the case of Bangkok, Daniere (1995) suggested that implementation of Transport Demand Management measures would have required

sacrifices by Thailand's elite, thereby suggesting that some interests were served by unrestrained motorisation.

Notwithstanding these largely ad hoc suggestions that there were specific interests benefiting from motorisation, the question of interests remains largely unexamined on a wider and comparative scale. These highly technocratic approaches, from both the motorisation proponents and the motorisation critics, implied that there was a public interest in Southeast Asian cities which would have been served by their preferred technical measures and teleology of urban transport. It was assumed that the public institutions involved in shaping urban transport in these cities were working to further a public interest; with the exception of the aforementioned suggestions about a few key beneficiaries of motorisation, the identification of "winners and losers" was not addressed. The urban transport problems in general were treated as technical rather than political questions, and descriptions of planning and policy-making assumed a high level of autonomy of state institutions to pick and choose plans and policies.

The centrality of the notion of a public interest was reflected in the language used in much of the research. Works by Barter (1999), Dimitriou (1998), Kenworthy and Laube (1999), and Poboorn (1997) suggested that Southeast Asian cities as wholes made decisions, rather than identifying which institutions and individuals in these heterogeneous and highly stratified societies actually gained or lost. In addition to the language which emphasised the actions of cities as unified entities, most of the research reviewed utilised data aggregated at the level of the entire city. However, in all of the cities, cars were owned by minorities of elites and middle class people. Similarly, aggregate data on air pollution and the quality and quantity of pedestrian space obscured the discrepancies between the local environmental conditions in poor as opposed to rich neighbourhoods and shopping areas. In addition, in virtually every Southeast Asian city, the enumeration of urban populations did not include large "floating" populations of poor rural migrants. For example, 1995 Bangkok population figures in a database (Kenworthy and Laube, 2001) were based on an official figure of 6.68 million

people determined by long-term house registration data for an area covered by the Bangkok Metropolitan Administration (BMA). However, transport consultants who reviewed a larger range of available government data, estimated that the actual mid-1995 population of the area covered by the BMA was closer to 8.13 million persons (MVA Asia et al, 1998). If some additional adjacent administrative areas, which covered the contiguous urbanised area were included, the population then jumped to 11.45 million (MVA Asia et al, 1998). The population of Bangkok also fluctuated within each year due to seasonal rural-urban migration which swelled Bangkok's population in the dry season from February to May by approximately 9 percent (Chamratrithirong et al, 1995). These kinds of statistical discrepancies would have significantly altered the analysis of transport characteristics of Bangkok in particular.

These and other shortcomings of aggregated analysis raised the issue of whose interests were furthered by urban transport systems and changes to those systems. In the previous chapter, it was shown that the idea of one public interest, while prevalent in the 1940s and 1950s in the cities of the developed world, was largely rejected by the 1990s. Was the perseverance of the public interest in Southeast Asia simply a case of insufficient quantity of research or oversight on the part of researchers?

The following sections make the argument that the assumption of a public interest in Southeast Asian cities reflected the beliefs and interests of researchers and institutions which carried out the research. Much of the work was produced by researchers either working directly for, or affiliated with, the World Bank (and to a lesser extent, the Asian Development Bank) and Japan's developmental state. These institutions had specific interests and were not democratically accountable to the citizens in Southeast Asian cities.

### **3.4.1 The World Bank**

The World Bank's involvement in studying urban transport in Southeast Asia and other developing nations is part of a larger range of practical activities. These

include technical and financial assistance in the preparation of plans and studies, including in the definition of problems. The problems are viewed as largely technical although it is acknowledged that politics often gets in the way of technically correct plans and policies, and the outcomes in the Bank's view are inevitably flawed. Projects for which the World Bank has given technical assistance and loans have led to physical changes to the urban form and circulation systems in these cities, and as a result the projects play a role in distributing costs and benefits (at the time of implementation, and into the future) and are thus the subject of political processes and contests.

However, the World Bank does not acknowledge that it has interests. The World Bank approach to industrialisation and development in general, and urban transport in particular is imbued with modernist ideals of development. At the core of this is the idea that economics (which is viewed as a technical matter about rational facts) can be divorced from politics (which is viewed as irrational rent-seeking). This ideal is enshrined in Article IV of the World Bank's Articles of Association which states:

The bank and its officers shall not interfere in the political affairs of any member; nor shall they be influenced in their decisions by the political characteristics of the member or members concerned. Only economic considerations shall be relevant to their decisions, and these considerations shall be weighted impartially (cited in Bergeson and Lunde, 1999:102).

Corresponding with neo-classical political economy and the so-called "Washington consensus," the World Bank and the ADB argued that the economic success in Southeast Asia's emerging market economies or "tiger economies" (Indonesia, Malaysia, the Philippines, and Thailand), had achieved successful development by pursuing strategies based on economic deregulation, privatisation, and fiscal austerity (Rodan et al, 2001). In addition, the World Bank argued that Southeast Asia's emerging market economies were more relevant as exemplars to countries outside East and Southeast Asia than the NICs (Singapore, South Korea, and Taiwan) in the 1960s and 1970s (Bowie and Unger, 1997). The basis of this is that the "late industrialisation" of the NICs was based on relatively

high levels of state intervention and developmental states which it argued were no longer feasible by the 1980s due to changes in the global political economy, including shifts toward neo-liberal foreign economic policies in the US and the UK (Amsden, 1995). Whereas the industrialisation of the NICs in the 1960s and 1970s was based on economic nationalism and protectionism, the growth of the emerging market economies in the 1980s and 1990s was based on foreign direct investment, particularly in export-oriented manufacturing.

The World Bank is particularly important in influencing ideas about development, including urban transport, for a number of reasons that go beyond the function of banking and finance. One is that “the World Bank is a fount of Anglo-American ideas on how an economy—and increasingly, a polity—should be run” (Wade, 2001:128). The US holds the largest share of voting rights in the World Bank, is the only member state able to exercise a veto on various key constitutional issues, effectively chooses the president, and has the only member legislature (US Congress) which has input into the process of allocating the Bank’s funds (Wade, 2001).<sup>23</sup> It is thus “an especially useful instrument for projecting American influence in developing countries, and one over which the US maintains discreet but firm institutional control” (Wade, 2001). It is also supported by massive resources which make it more than “...just one of a number of fairly equal actors in the world of development economics” (Bergeson and Lunde, 1999:129). The studies that the World Bank conducts are imbued with the wider institutional interests in guiding actions in line with increasing competition and regulation.

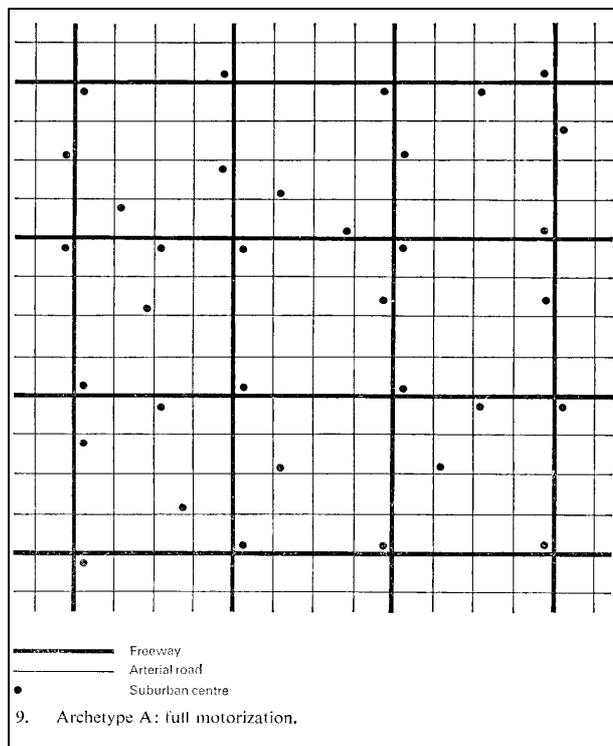
The World Bank is an institution with interests which influence how it interprets the dynamics of urban transport in Southeast Asia. However, these interests are not acknowledged as such. It does, however, suggest that there are individuals who seek to thwart technically correct and “market-oriented” solutions to urban transport problems through political processes. In the World Bank’s teleology of

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<sup>23</sup> While holding the largest voting share (13%) along with Japan in the ADB, it is widely acknowledged that US influence is less pervasive over the ADB, which is currently headed by a Japanese national and which is based in Manila. Nonetheless, the ADB promotes the creation of markets and institutions similar to that of the World Bank, which it follows in formulating policies and programmes for urban transport.

urban transport, the ideal cities are Los Angeles and Detroit which are representatives of Thomson's (1977) archetype of a full motorisation strategy (Figure 3.4). The main problems are traffic congestion, a lack of road space, and inflexible public transport. The prescriptions are for facilitating consumer choice and competition in a car and bus-based system, private provision of road infrastructure and bus services, and pricing to achieve less congested roads and faster motor vehicle movement while improving fuel qualities and the pollution control devices on individual motor vehicles. The main barriers to achieving these objectives are lobbies, special interests, and rent-seekers.

**Figure 3.4 Full motorisation strategy**



Source: Thomson (1977)

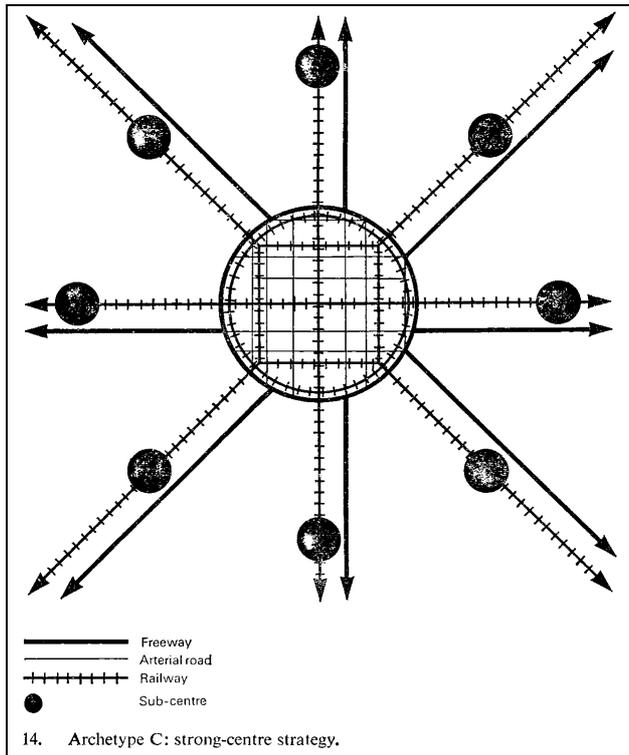
### 3.4.2 Japan's developmental state

In contrast to the World Bank's recognition of rent-seeking, questions of interests were altogether neglected by extensive research carried out by institutions and individuals working under the auspices of Japan's developmental state. Like the World Bank, through technical assistance and cooperative research programmes,

Japan has actively influenced changes to urban transport in Southeast Asia. While Japanese institutions had been active in Southeast Asia's cities since the 1960s, in the 1980s and 1990s this involvement increased dramatically. In the mid-1980s a boom in intra-regional capital and industrial flows from Japan (and to a lesser extent from the other East Asian NICs) to China and Southeast Asia (Indonesia, Malaysia, the Philippines, and Thailand) began. This massive movement was precipitated in part by the 1984 Plaza Accord which led to the inflation of the Japanese Yen and which made transfer of Japanese manufacturing offshore imperative for continued industrial success. Japan began building an Asian "production alliance", in part as a platform from which to continue supplying high-technology products, including motor vehicles, to Western markets (Hatch and Yamamura, 1996:36). According to Hatch and Yamamura, Japan's high-tech manufacturers were investing in East and Southeast Asia not for cheap labour but for a strategic purpose: "to achieve economies of scale, scope, and networking by capitalising on the region's deepening division of labor" (1996:22). Thus, Japan's foreign investment policies were linked to the domestic political economy of Japan, which had as its main goal the systematic development of Japan's industrial structure and technological capacity (Beeson, 2001). One distinguishing feature of Japan's domestic political economy which shaped Southeast Asian cities was the close relationship between the private and public sectors which together comprised what is termed the "developmental state".

Like the World Bank, which envisages linear progress toward decentralised and motorised cities, the official Japanese view is that the Southeast Asian nations in their industrialisation and urbanisation are following the same linear path although to varying extents they are decades behind. However, the Japanese vision of the end-state of Southeast Asian cities resembles Tokyo rather than Los Angeles. The vision is for centralised cities with high capacity rail and expressway facilities which together create a spatial form that closely resembles Thomson's archetype of a strong centre strategy (Figure 3.5).

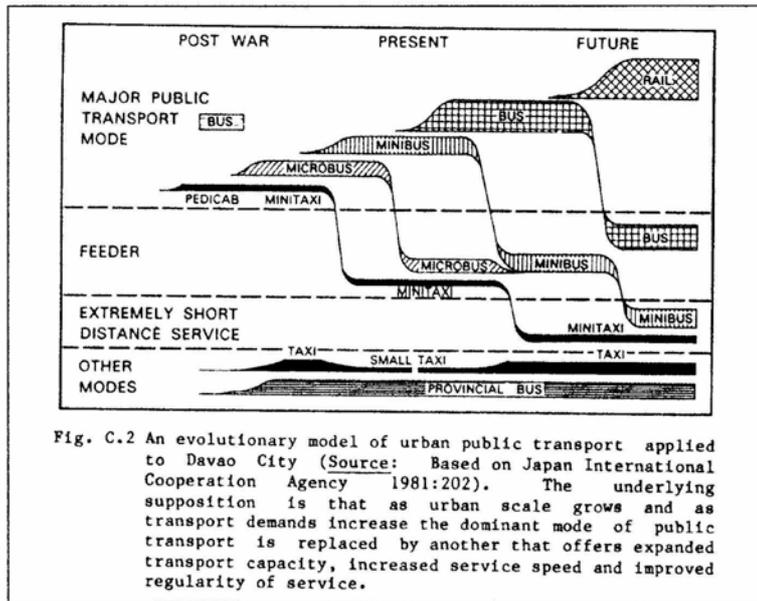
**Figure 3.5 Strong-centre strategy**



Source: Thomson (1977)

As Japanese foreign direct investment in Southeast Asia rose, so too did technical assistance and lending for urban transport projects. In one of the first technical assistance studies for urban transport from the Japan International Cooperation Agency (JICA) in 1981, Japanese planners articulated a conceptual model of how urban public transport could and should change in Southeast Asian cities (See Figure 3.6). According to this idealised process, Southeast Asian cities would move towards systems in which rail became the major public transport mode, served by large capacity buses which would act as feeder services.

**Figure 3.6 Evolutionary model of urban public transport**



Source: Rimmer (1986)

According to Takai (1997), urban transport problems faced by Asian metropolises undergoing economic development are the result of delayed transport infrastructure, which has not kept up with urbanisation. This is similar to the World Bank's position that road infrastructure development has lagged, although in the Japanese version there is also an important role for rail infrastructure which is poorly developed in most Southeast Asian cities, particularly in comparison with Japanese cities. By the 1980s, a "Tokyo model" of urban transport development was being disseminated in the Southeast Asian region (Rimmer, 1988). According to Ieda (1994), one reason why Tokyo has such a strong rail orientation in comparison to Bangkok and Manila is because by the early twentieth century, Japan was manufacturing all materials and equipment for railways. Although electric streetcars and an electric railway had been established in Bangkok before Tokyo, these were built, owned and operated by European companies. Thus, the key to Japan's extensive rail development was the government's drive to acquire "self-sufficiency" in rail technology and manufacturing at an early stage. However, this cannot explain why Singapore, and more recently Kuala Lumpur, which like other Southeast Asian governments have

not sought to acquire self-sufficiency in rail technology and manufacturing, have nonetheless developed extensive urban rail networks.

Like the World Bank's research, that carried out by researchers working for Japan's developmental state is used for practical activities associated with specific interests. In addition, the applied research carried out through Japan's massive Overseas Development Assistance (ODA) programmes in Southeast Asia are similar in many respects to the bilateral development assistance programmes of many industrialised nations. Predictably, definitions of problems and solutions are based on the experience of the industrialised nation sponsoring the research which is usually executed by consultants and academics from that nation. This assistance is implicitly and explicitly linked to furthering the strategic industrial and broad economic interests of the developed nation, in addition to more altruistic concerns. Much of the emphasis of this technical work is oriented toward planning large scale urban transport infrastructure projects. Unlike the World Bank and the Asian Development Bank, the Japanese government has advocated government finance of urban transport infrastructure. It has recommended tolling of expressways in order to raise government revenue as in Japan. In the mid-1990s, experts working for Japan's Ministry of Construction expressed caution toward BOT projects while planning urban transport for Kuala Lumpur and in general warned about the nature of BOTs in developing nations. The basis for this caution was articulated that "necessary road routes" with poor prospects for profitable revenue generation would be "left behind", that the quality, safety, environment concerns, and operations and maintenance of infrastructure could be neglected, and that "high toll rates" could have negative impacts on the national economy (Akimura and Nishioka, 1996).

While much of the technical assistance is not formally linked to funding, other institutions and companies that are part of Japan's developmental state are engaged in infrastructure finance and construction. Large scale infrastructure projects in Southeast Asia have been supported with loans from Japan's Overseas Economic Cooperation Fund (OECF). In 1999, the OECF and the Export-Import

Bank of Japan combined to become the Japan Bank for International Cooperation (JBIC) which, according to statements from JBIC, will:

...contribute to the sound development of Japan and the international economy and community through undertaking lending and other financial operations; for the promotion of Japanese exports, imports or Japanese economic activities overseas; for the stability of international financial order; and for economic and social development of economic stability in developing areas; in accordance with the principle that it shall not compete with commercial financial institutions (JBIC, 2000: <http://www.jbic.go.jp>).

The low interest loans which are provided are linked to the participation of Japanese conglomerates in construction of the projects which have included major expressway and rail infrastructure projects, as well as airports. In addition to planning and financing urban transport infrastructure, Japan has also had a profound influence through locating motorcycle and car manufacturing to locations in and around most large Southeast Asian capital cities. While much of this production involved using the Southeast Asian nations (and their labour and export quotas) for export, the Southeast Asian cities have also become major markets for the vehicles. In this respect, the experience of Southeast Asian nations as “foreign export manufacturing platforms” is different from that of Japan (and South Korea) which until the 1990s produced vehicles for export while restraining their ownership (along with restraint of other consumer items) at home in order to increase industrial competitiveness (Hook, 1996).

Japan’s activities in general terms are certainly not unique. Similarly, many governments in industrialised nations (and particularly those with transport-related goods and services for sale: Australia, Canada, France, Germany, and South Korea), have been active in funding studies and technical assistance in cities, especially in developing countries. They have also had some influence through offering scholarships, training, workshops, and seminars to disseminate knowledge. The Japanese government and private companies have also replicated Japan’s industry-government relationship through funding transport research institutions (e.g. the Asian Center for Transportation Studies at the Asian Institute of Technology in Bangkok). It is usually made clear that this is being undertaken

not just for altruistic purposes, but also in order to promote industrial interests. However, Japan is unique in some respects. It might be said that it is the quintessential example of a modern 'trading state' that makes its way in the world by economic rather than military expansion. Germany might also be considered in the same way, although what distinguishes Japan is the nature of its domestic political economy and the way in which this is linked with the outside world:

Ostensibly intended to provide developmental assistance to poorer countries, Japan has utilised its ODA to promote a number of strategic objectives that reflects Japan's national interest and assists the international expansion of Japanese corporations. Although this is not a uniquely Japanese phenomenon, what distinguishes the Japanese approach to ODA is the 'structural inclusion' of Japanese business in the construction and implementation of policy. The key objective of ODA is the promotion of Japanese trade and investment (Beeson, 2001:289).

The strategies of Japan's automobile, rail, construction and engineering companies have been systematically coordinated with the Japanese government's provision of ODA in the form of knowledge, capital, materials and services, to Southeast Asian nations. Due to the massive scale of Japanese involvement, certain characteristics of Japan's domestic political economy have been replicated in Southeast Asia through the provision of aid and trade. One of these is the substantial participation of construction corporations with interests in building and operating transport infrastructure. In Japan, construction and real estate industries are intimately linked to the ruling Liberal Democratic Party through massive financial contributions which much to the chagrin of the USA, would not be allowed there (Woodall, 1996:11).

While these measures have assisted Southeast Asian governments in obtaining knowledge, capital, and technologies, they have also truncated debates and issues. The problems and solutions are defined in relatively limited terms to those areas in which the Japanese economy would benefit as well. The actions proposed by Japanese technical experts may be appropriate and sound given the density and other conditions in Southeast Asian cities, which share more in common with their Northeast Asian counterparts than the US cities. However, the actions that

are funded by the Japanese government in Southeast Asia are those large scale projects which will provide benefits for Japanese construction conglomerates. For example, while in Tokyo and many other Japanese cities bicycles and non-motorised transport play a large role, these are rarely included in the plans and they are not financed. It has been noted by Japanese academics that the success with rail development in Japan is rooted in the Japanese government's aggressive acquisition of technology and knowledge a century ago. However, Southeast Asian governments have not been encouraged by Japan's developmental state to undertake similar measures, a state of affairs which places them in a qualitatively different position from Japan in previous decades.

The main thrust of all Japanese planning in Southeast Asia is on capital-intensive infrastructure projects which support transport equipment and services being sold by Japanese firms, and on linking and accommodating the needs of Japanese businesses located in Southeast Asian cities.

### **3.5 Conclusions**

This review suggests that the body of research on urban transport dynamics in Southeast Asian cities differs substantively from wider debates and theorising. In other words, while there is less volume of work on Southeast Asian cities, there are also differences in the overall content. In a very broad sense, the state of knowledge on Southeast Asian cities resembles the state of knowledge on Anglo-American cities in the 1940s through to the 1960s. The main point of similarity is the underlying idea of one public interest which can be served by expert planning and knowledge. Particularly, the question of which interests and whose interests are served by transport system dynamics have not been systematically addressed. However, it is noteworthy that challenges in Western nations to notions of interests did not emerge from academic study alone but through citizen protests. However, much of the academic knowledge and theorising on Southeast Asian cities has been carried out not by local citizens involved in day to day life in those cities, but from experts mainly from the cities of industrialised nations with interests themselves in the processes of change in Southeast Asia.

The dominance of the World Bank (and to a lesser extent the ADB) and Japanese ODA (and to a lesser extent, that of other industrialised nations) have reinforced the omission of the role of interests in shaping urban transport. They have also limited interpretations and debates to primarily commercial concerns. In a report for the World Bank, Midgely observed that a systematic lack of attention to non-motorised vehicles and pedestrians is partly explained by the lack of export potential on the part of bilateral donors (1994). In some respects, this resembles the assessment of Altshuler et al (1979) who pointed out that in the US, researchers proceeded from the interests of key institutions and occupational groups in the field.

However, in Southeast Asia, there have been no “bottom-up”, citizens’ challenges to expert theories, nor any widespread organised opposition to automobile-based transport plans that were evident in the USA and Europe through the 1960s and 1970s. Some debate took place between researchers from developed nations and the form and content of the debate resembled that in their home countries. Notably, most of these researchers were affiliated with institutions without democratic accountability (e.g., the multi-lateral development banks and foreign technical assistance programmes). In Southeast Asia, there have been a number of localised community struggles for survival in their established locations in the face of destructive projects. Often the cause of displacement was for private or public building projects, but in many instances they were for the creation of new transport infrastructure (Barter, 2002). However, in the extensive research conducted for this dissertation there appeared to be no articulation of alternative conceptions such as Jacobs or Mumford in the case of US cities. There have been isolated struggles of communities facing eviction or other negative impacts of urban transport infrastructure projects, but these “survival struggles” have not been translated into intellectual or theoretical challenges. In the few cases of community resistance that have occurred, generally to direct and indirect impacts of expressways, these communities are largely fighting for their immediate

survival in that location, rather than over an alternate conception of what the city could be in the future.

Another characteristic which is related to the lack of attention to the question of interests is that a wide range of prescriptions are made without reference to their prospects for implementation and the possible constraints. The result is highly technical research and prescriptions which are very abstract and disembodied from the institutional, political, and social context of Southeast Asian cities. Understanding the interests which dominate in Southeast Asian cities is essential to understanding the actual changes that have occurred. This focus could also offer insights for those making policies and plans in Southeast Asian cities.

## CASE STUDIES OF URBAN TRANSPORT IN SOUTHEAST ASIA: METHODOLOGY

### 4.1 Introduction

The third research question in Chapter 1 asked whether there was a theoretical approach which can explain changes within, and differences between, Southeast Asian cities. The literature review in the preceding chapters revealed that analysis of the politics of urban transport and particularly the activities of “special” or “vested” interests and lobby groups became important to theorising urban transport changes around the world. This type of analysis was used extensively in explaining the decline of rail and the rise of motorisation in many cities, particularly in industrialised nations. However, in-depth studies of politics, power, and institutions and how they influenced urban transport in Southeast Asia were relatively absent. This chapter begins by reiterating the rationale and design of the methodology employed for this thesis research. It is important to acknowledge that through the literature review a number of suggestions about interests and political questions were made with reference to Southeast Asian cities. While these considerations were treated as an adjunct to the mainly technical analysis, they provide a foundation for the research that is to follow in the thesis.

Some proponents of theories largely supportive of motorisation made reference to special interests engaged in rent-seeking and involved in “politics” in the cities where transport conditions were viewed as unsatisfactory. Singapore’s successful urban transport system in general and the implementation of particular plans and policies were linked to the autonomy of the city state’s government from “vested interests”. According to these theories, expounded mainly by transport economists, the principal urban transport problem facing all cities was motor vehicle traffic congestion, which was not in “the public interest”. Singapore’s success in maintaining free-flowing traffic, particularly during peak hours, was based on the design and implementation of a road pricing scheme. The implication was that in cities where traffic was congested, there were actors with interests

which impeded the implementation of “technically correct” measures such as road pricing. However, the specific actors and their interests were not clearly identified in most Southeast Asian cities.

In contrast, critics of motorisation were concerned mainly with the negative environmental and social impacts of motor vehicles in dense Southeast Asian cities. Some critics suggested that certain segments of the population in various cities, and the populations as wholes, were made worse off by the growth in automobiles and roads. In response, they advocated various motorisation restraints, often with favourable reference to Singapore and other Asian cities where such measures were successfully implemented. The reason why these measures were not implemented in most Southeast Asian cities was commonly ascribed by motorisation critics to technical errors in the choice of planning methodologies, ignorance, and a lack of “political will” which could be interpreted as synonymous with the “interests” of those individuals or groups holding power. However, this research did not specify which individuals or institutions were served by motorisation and facilitating rather than restraining the use of private motor vehicles in Southeast Asian cities.

The previous chapter concluded by suggesting why the benefits and beneficiaries of substandard changes and outcomes were not examined more closely and systematically. It contended that most of the reviewed research was technical in nature and was linked to institutions which were involved in focused practical activities which precluded a wider consideration of processes and identification of problems and solutions. While these ulterior motives were not necessarily hidden, they generally went unacknowledged. Because many of these institutions were associated with commercial activities in selling specific goods and services, a range of issues not directly relevant to, or compatible with, these activities were excluded from the analysis.

The lack of analysis on which interests have benefited from urban transport systems in the cities of Southeast Asia provides a rationale for the original

research that follows in this dissertation. This analysis seeks to systematically address questions surrounding the concept of interests in urban transport decision-making. These questions include: What kind of interests? Whose interests? By what mechanisms were they furthered? In order to address these questions, research which focuses on the actual processes in specific places and times is required. It is argued in this dissertation that the types of interests that were furthered by the characteristics of the implemented urban transport systems, could provide insights into why differences in characteristics, and particularly differences in the use private motor vehicles compared to the use of public transport, have emerged in Southeast Asian cities.

The theoretical approach and the types of questions that are pursued in this thesis shaped the design of the methodology. In order to answer these questions, it was necessary to research the dynamics of urban transport change over time within Southeast Asian cities, in addition to comparing the transport systems of cities in particular years. This approach was necessary to explore questions surrounding which interests were served by the operations and changes in each of the urban transport systems. The patterns of interests within cities and at different times were then linked to the aggregated outcomes that were evident in quantitative studies reviewed.

Individual action, such as decisions to use growing household wealth to purchase and use cars and motorcycles, has been and continues to be an important agent of change. However, collective actions in each of the cities have facilitated these choices: for vehicles to be used with relative ease, road space and parking have been expanded by governments and private corporations, which are the only entities with sufficient resources to produce these collective amenities. For example, trams, slow-moving vehicles, mixed traffic, and buildings were systematically removed in order to increase road area for motor vehicles. Much of this expansion went hand-in-hand with the displacement of dense inner city neighbourhoods that previously provided their residents with a wide range of activities accessible by non-motorised means. In addition, roads were expanded

through the removal of public sidewalk space and these changes further restricted the quality and quantity of space for pedestrians, cyclists, and other non-motorised transport users. The motor vehicles fouled the air of the confined spaces of inner cities. New residential, commercial, and recreational facilities were built in more automobile-dependent locations to take advantage of new site accessibility and “cleaner”, “greener” surroundings and a self-reinforcing cycle started and continues today. Individual households with sufficient incomes moved outwards toward the greener periphery and contributed to the problems of air pollution and motorisation which increased demands for collective responses to air pollution and traffic congestion. In response, some actions were taken to improve mass modes of transport and non-motorised vehicles. The research that follows in this thesis focuses mainly on these collective actions which were often associated with large individual and societal benefits and costs, over the nonetheless important actions of ordinary individuals and households.

#### **4.2 Choice of case study cities**

It would have been virtually impossible for one researcher to undertake in-depth research on largely unexplored questions relating to interests and large-scale changes in all of Southeast Asia’s large cities. Thus, it was decided that case studies would be chosen from Southeast Asia’s largest cities, which are also the capital cities of the most industrialised of the Southeast Asian nations. This narrowed the choice to five capital cities: Bangkok, Manila, Kuala Lumpur, Singapore, and Jakarta. It is these cities where most of the previous research on urban Southeast Asia has been conducted, and it is these cities where the largest changes have occurred. In terms of governance, the capital cities are all dominated by national institutions and structures and thus provide roughly comparable units of analysis. The distinctive political systems of each of these nation-states present difficulties for comparative analysis, but at the same time offer possibilities for illuminating insights.

However, the size and population of these five cities (more than twice that of Australia) was still too large for the proposed study. In response, a more

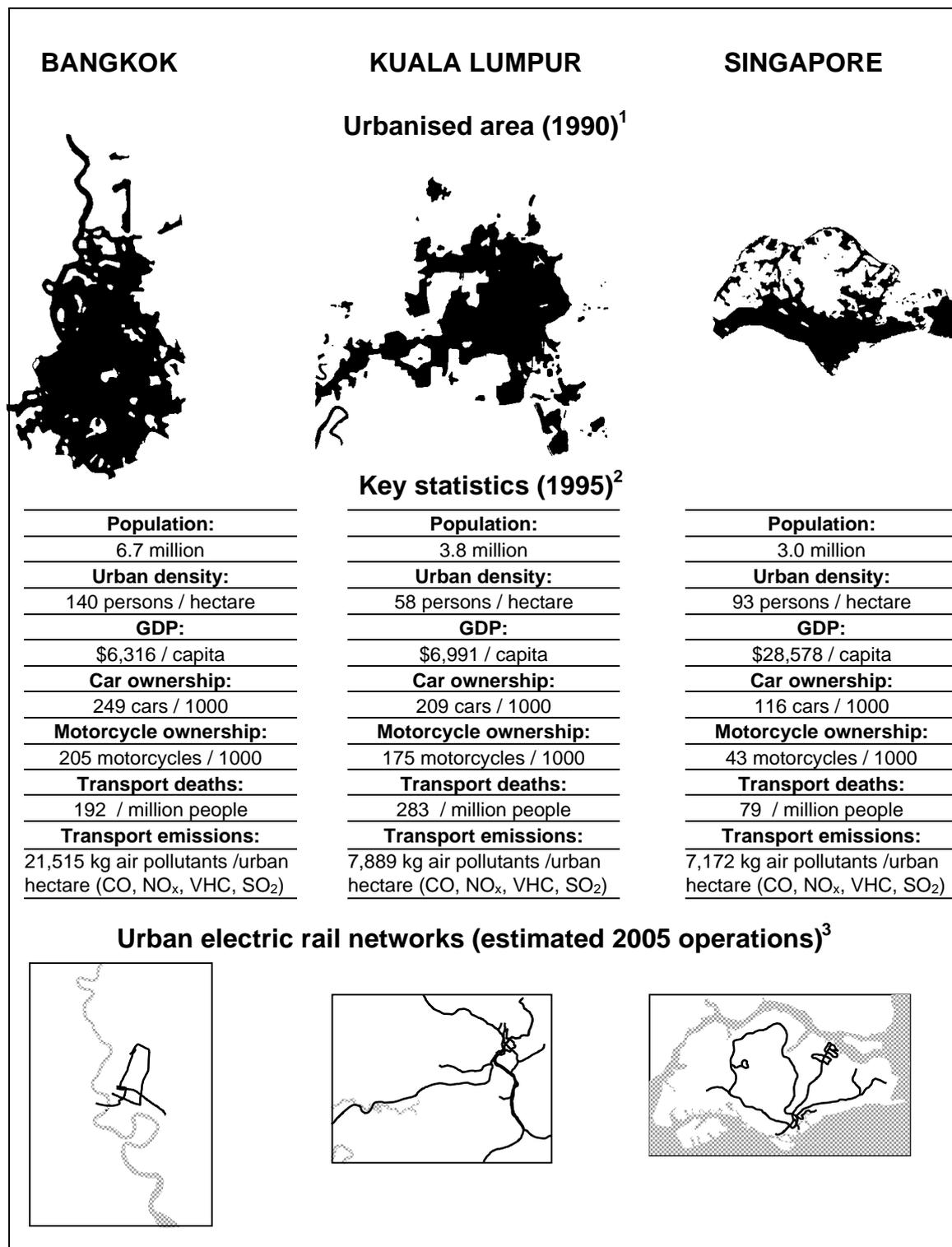
manageable number of case studies were selected as representative of different actions and outcomes. Following a substantial literature review on Southeast Asian cities in general, Bangkok, Kuala Lumpur, and Singapore were selected as cases representing widely different urban transport conditions. The sections below briefly introduce each of the cities, with reference to Figure 4.1.

#### **4.2.1 Bangkok**

Bangkok, the capital city of Thailand, differs in many ways from Singapore and Kuala Lumpur, but is similar to the other two Southeast Asian mega-cities of over 10 million inhabitants, Jakarta and Manila. Webster (2000) classifies the three Southeast Asian mega-cities not only on the basis of size, but also on the basis of government structures and capabilities: the three are members of a “class of cities...characterised by: (i) diffuse and poorly coordinated institutional responsibility for urban management, including finance; (ii) ineffective land use planning; (iii) limited local government powers; and (iv) limited revenues and financial resources to cope with past and/or existing growth” (Webster, 2000:5).

The choice of Bangkok over the other two mega-cities was made for a number of reasons, not the least of which was because I had lived and worked there for over 3 years and therefore had a good basic understanding of existing institutional arrangements. The distinguishing characteristics of Bangkok’s transport system, which in many respects is representative of many “middle income” developing cities in Asia and Latin America, include high motor vehicle ownership and use (the highest in Asia, see Figure 4.1), high density and highly concentrated air pollution and other negative impacts of motor vehicle use, and a relatively low level of high quality public transport with its own right-of-way. Bangkok’s international notoriety for having a dysfunctional urban transport system also influenced its selection. In many respects Bangkok represents the extremes of transport problems and environmental degradation which face many great cities in

**Figure 4.1 Characteristics of three case study cities**



**Sources and notes:**

1. Bangkok (most of Bangkok Metropolitan Administration, Pathum Thani, Samut Prakarn, and Nonthaburi), Kuala Lumpur (Klang Valley: Wilayah Persekutuan KL, Negeri Selangnor: Daerah Klang, Daerah Petaling, Daerah Ulu Langat, Daerah Gombak), and the Republic of Singapore. Reproduced from Kenworthy and Laube (1999).
2. Bangkok Metropolitan Administration, Klang Valley (Kuala Lumpur extended metropolitan area), and the Republic of Singapore. Source: Kenworthy and Laube (2001).
3. Excludes inter-city diesel train services which are used by some metropolitan commuters in all three cities. According to 1995 data from Kenworthy and Laube (2001), inter-city State Railway of Thailand diesel services carried small numbers of metropolitan Bangkok commuters, as did Malaysian national railway (KTM) in metropolitan Kuala Lumpur. KTM carries daily passengers between Johor Bahru (Malaysia) and Singapore which together form a larger urban conurbation crossing national boundaries.

the industrialising world. As in Jakarta and Manila, the problems at a city-wide level of mobilising collective actions for environments which support sustainable economic productivity and a high quality of life for all citizens in these cities, is endemic to many cities of the developing world.

#### **4.2.2 Kuala Lumpur**

Kuala Lumpur, capital of Malaysia, was chosen because it is often characterised as a city that in many respects is intermediate between Singapore and the Southeast Asian mega-cities in terms of governance and planning. For example, Rimmer (1999) classifies Kuala Lumpur, along with Singapore, as Southeast Asia's "planned cities" in which the state played a large role in guiding urban development. It has also been the site of major urban electric rail expansion since the mid-1990s continuing until the present. At the same time, however, Kuala Lumpur has become increasingly automobile dependent and has been described as Asia's most motorised city. These apparent anomalies are reflected not only in the few accounts in the literature of Kuala Lumpur's urbanisation, but also in the wider literature on Malaysia's industrialisation and development. Malaysia is sometimes classified as a developmental state along with the Newly Industrialised Countries (NICs) including Singapore. Other times, Malaysia is considered to be more like Thailand or Indonesia. The inclusion of Kuala Lumpur as a case study therefore provided the opportunity to explore changes in urban transport in a city where a wide range of quite different forces and factors appeared to be at work.

#### **4.2.3 Singapore**

Singapore, an independent nation-state that is also an island, is widely regarded as the most successful and liveable city in Southeast Asia, in part because motor vehicle ownership and use have been kept to manageable levels while an extensive public transport system focused around a continually expanding rail network has been built. These outcomes of low vehicle ownership and use, high public transport use, amid high GDP per capita, distinguish Singapore not only within the Southeast Asian region, but also worldwide. Singapore is also important from the point of view of researching the question of interests because it

is frequently held up as an example of a state which has been freed of vested interests and rent-seeking. In its latest urban transport strategy document, the World Bank attributes Singapore's successful urban system to leadership that is centralised, insulated from politics, and relatively autonomous from vested interests and rent-seekers. It is widely acknowledged that collective actions (government policies, state institutions, and public planning) have played a major role in shaping changes through highly technocratic processes.

Singapore is well-represented in international research and debates about urban transport, and is frequently held up as an example or model which could and should be followed by other cities, particularly in Southeast Asia. It is regularly argued that Singapore's success results from implementation of public policies and plans which are the only rational responses to the city-state's physical environment. In particular, transport economists emphasise the positive impact on motor vehicles speeds of measures attaching prices to the use of congested roads. Supporting this view is a large volume of works describing the technical details of policies, plans, and measures implemented by Singapore's government, while discussions of governance or politics are largely absent (e.g. Ang, 1990; Ang, 1993; Chin, 1998, Fan et al, 1992; Goh, 2002; Lim, 1997; Menon and Lam, 1993; Olzewski and Turner, 1993; Foo, 2000; Tan, 1976; Willoughby, 2000). The overall focus of these works is on specific policies and plans designed to reduce traffic congestion, which is widely accepted by transport economists, traffic engineers, and Singapore's leaders as the central urban transport problem.

### **4.3 Approach to the case study research**

The case study research was largely exploratory and drew on information from a wide range of potential sources of information. These sources included published and unpublished literature, government reports and plans, studies carried out by consultants, newspaper clippings and news magazines, discussions with government officials, academics, representatives of NGOs, community leaders and other key informants, and informal participant observation in a number of seminars and workshops. Due to the relatively sparse literature and written

documentation of the events I was attempting to document and analyse, a high degree of cross checking of information was required. A substantial archive of research materials including newspaper clippings was assembled and used as a method of verifying stories and events. The extent to which these methods of information gathering were utilised varied between the cities.

In order to focus the analysis, the task is bounded in a number of ways. One is that it focuses on collective actions which led to major changes, as opposed to more individual and local decisions such as daily travel decisions, household or small business location decisions. These actions included expanding existing transport infrastructure, creating new supply of transport infrastructure, changing the location and distribution of activities, and changing the relative costs of various modes of transport. The actors participating in these collective actions included, but were not limited to, politicians and political parties, local small scale private enterprises, multinational corporations, universities and academic institutions, technocrats and planners, local neighbourhood associations and community-based organisations, multi-lateral development banks and the development assistance agencies of industrialised nations, non-government organisations and organised protest groups, and government agencies at levels ranging from the local to the national.

An initial, exploratory literature review indicated that while sources such as consulting reports, studies carried out by multi-lateral development institutions, and existing academic studies would be useful, they would not be sufficient to answer questions about the composition of interests in each of the case study cities. In seeking how to research and write the case studies, I was influenced by a number of well-known works. One was Altshuler's study, *The City Planning Process: A Political Analysis* (1965), which was one of the first to examine city building, in this case in the US twin city Minneapolis/St. Paul, as a political rather than a technical process. A more recent work was Flyvberg's 1998 contribution, which utilised a case study of a transport and land use project in the City of Aalborg, Denmark, as a means of examining the interaction between technical

rationality and power. Flyvberg methodically describes the process in Aalborg in relatively objective terms before undertaking a more philosophical approach to theorising the observed processes. Comparative analysis of the case studies of different transport histories and outcomes were informed by the works of Adler (1987) and Yago (1984). Adler sought to explain why a new rail mass transit system was successfully built in San Francisco while a proposed system in Los Angeles was not built. Yago provided an international comparison between the cities of the US and Germany over a long time period, and traced the differences to the power and influence of different types of corporate institutions.

The case studies are written as narratives and analysis of major urban transport changes occurring in recent decades in each of the cities. This alone was a major task, which involved structuring and interpreting a large amount of material: Bangkok proved to be a particularly complex case. I mainly describe the “big” processes and events in each of the cities, although this approach overlooks the more localised and “human” dimensions of change. The alternative would have been research which was more ethnographic in character, and which could have examined the smaller struggles and daily actions of households and key individuals. Nonetheless, the research, writing, and overall organisation of these histories proved to be a substantial task which has not been carried out before and in and of itself represents an original body of work.

#### **4.4 Field research and challenges**

The case studies were researched using a number of field research techniques. Bangkok served as a fieldwork base from July 2000 until March 2001, and research trips were made to Kuala Lumpur in November 2000 and to Singapore in March 2001. In conjunction with a trip to the 2001 World Conference on Transport Research in Seoul (where I presented an early paper based on the thesis research), follow up visits were made to Kuala Lumpur and Singapore in July 2001. Opportunities for participant observation and intensive information-gathering were made possible by my attendance at a number of meetings, seminars, and workshops, which included the participation of senior government

officials, academics, consultants, and politicians from each of the cities (Appendix 1). While these large meetings provided plentiful opportunities to learn about the three case studies and discuss my research questions with a wide variety of experts, many more discussions were undertaken.

Extensive attempts were made to talk to people with expertise on urban transport in each of the cities in order to canvass their opinions, seek guidance, and obtain stories about particular urban transport changes. Because the research sought to delve into subjects which may have been sensitive to the individuals I talked to, I avoided asking pre-set questions or conducting interviews which would have required official protocols such as signed consent forms. Such formal processes where interviewees could be 'traced' and held accountable for their responses would have had two main problems. The first is that a request for a formal interview and transcription of responses would have met in many instances with outright refusal, due to concern over possible negative repercussions for them or the organisations they work for. This anticipated difficulty was confirmed during the field research process, when numerous experts asked that their responses would not be quoted. The second problem is that official, formal interviews, where granted, are more likely to elicit the 'party line' or responses of an innocuous nature and thus be almost useless in probing questions surrounding the interests that were furthered by changes to urban transport.

This research strategy proved to be successful because I received candid and honest information that exceeded my expectations and had a major impact on how the research was shaped. In the course of the field research I talked to academics, mid and senior level government officials, consultants, community activists and NGO representatives, and managers from government-linked enterprises who had been involved in actions affecting urban transport. I attempted to draw out from these discussions their opinions why public or private transport and related infrastructure had come to play a larger or smaller role in each city. In numerous instances, the interviewees had obviously thought a great deal about these matters and were willing and able to contribute opinions. Many were aware of the

situation of more than one of the three case study cities and were able to provide suggestions as to why differences have emerged in Southeast Asia. In order to focus the discussions, I often asked why the relative share of public versus private or motorised versus non-motorised infrastructure had changed in the city, and why integration between public and non-motorised modes was present or lacking. In addition, I sought opinions on why plans and policies were successful or unsuccessful and in particular what lay behind Singapore's success.

The information I received was valuable but had to be cross-checked. One shortcoming of the research approach was that because formal interviews were not transcribed and recorded (and because official interview protocols were not followed) the information could not be directly quoted. As a result, I have included in the Fieldwork Diary (Appendix 1) a list of places and institutions I visited, but I have omitted the names and positions of the people to whom I talked. While these discussions were vital for the research, the facts and opinions accumulated were carefully cross-checked to ensure accuracy. In many cases, the information I was given was not directly relevant or was deemed to be unreliable. Hence, the findings were not based simply on this information, but it was used as a guide and part of the overall learning experience. These conversations are not directly referred to in the text in order to protect the anonymity of the sources.

In the course of the meetings and visits to various institutions, I collected a large volume of documents including academic papers, policies, and plans. While these proved useful for obtaining details of specific projects and actions and for discerning the directions that technical experts wished to direct actions, I approached them from a sceptical point of view, as many of the details were incorrect and often influenced by clearly political concerns. For example, in Bangkok a two kilometre elevated expressway link, which does not exist appears on most maps and plans as though it does exist, which is clearly the wish of numerous powerful actors. It is likely that by including the expressway on maps, those in favour of the project were seeking to undermine any sense that the project was reversible or in doubt.

Another major source of information was online and hard copy newspapers and magazines in each of the cities: the publications used are listed following the list of references at the end of this document. I often used newspapers to verify statements made to me by informants, although, not surprisingly, I also found factual inaccuracies in newspaper articles in all three cities. It is unlikely that this project would have been completed in its finished form without Internet research. However, it was ultimately field visits, using various modes of transport in each of the cities, and talking to people which yielded most insights, which were subsequently backed up by Internet searches for specific information such as dates and events.

The unreliability of some sources was linked to constraints on criticism in each of the nations. One of the findings emerging from Chapter 3 is that there is a lack of challenges or articulation of alternative interests in Southeast Asian cities. At least a partial answer to this question emerged during the process of carrying out the field research. In all three cities there were strong informal and formal sanctions discouraging questioning of official narratives or power structures and the interests of those holding power. In all three cities, comments on the activities of government officials are highly controlled, and often subject to laws ostensibly used to protect “national security” or various aspects of “culture.” In Singapore there is no news media independent of state ownership and control, and international newspapers and business publications have been banned for publishing news deemed critical of the PAP regime. Strict anti-defamation laws and extremely punitive and politically motivated libel suits are used against Singaporean critics of the government, and self-censorship is commonplace. In recent years, there have been citizen attempts to “test the limits” of government tolerance for criticism in the newspaper. Some of these attempts have been strongly rebuked by the leadership. In Kuala Lumpur, newspapers are subject to government control and international publications have been banned in the past. An independent internet news site ([www.malaysiakini.com](http://www.malaysiakini.com)), taking advantage of the Malaysian government’s promise to allow freedom of expression on the

internet in order to further development of information technology industries) was created a few years ago, but in early 2003 was investigated under the Sedition Act. Recently in Thailand, the Prime Minister has attempted to clamp down on the media (critical of the PM's business activities) by withdrawing advertising by his companies and in one case purchasing an independent news outlet and then firing the critical journalists (Rodan, 2002). Also in Thailand, lese majesty laws (intended to prevent critical comments on the monarchy) were recently cited in the banning of foreign business publications which had also been making critical comments on the Prime Minister's leadership and business (Rodan, 2002). In the early 1990s a military coup leader in Thailand used lese majesty laws to prosecute a critic of the coup (Kershaw, 2001).

These constraints on critical comment within the news media are replicated by many other controls on what one can say or write in all three nations. Nonetheless, in both Thailand and Malaysia I found a surprising willingness among government officials and others in positions of privilege to openly discuss the activities (including shortcomings or illegitimate activities) of politicians and bureaucrats. While government documents such as plans and policies in Malaysia are treated with a high degree of secrecy, on a face-to-face basis, government officials were eager to criticise the political and bureaucratic leadership and the performance of government agencies, including their own. There was a generally high level of dissatisfaction with the collective actions in these two cities, and people readily and without prompting ventured their critical opinions. In fact, I was genuinely surprised by the openness of relatively high level officials (in one case the director of a bus agency and in another case a senior manager in a government linked company) to disclose problems associated with corruption and their general dissatisfaction with what they viewed as political manipulation of their agencies. This was particularly surprising to me in Kuala Lumpur because I was a relatively uninformed foreigner asking questions, whereas in Bangkok I had some credentials having worked there on technical assistance projects within a government agency. Notwithstanding this apparent openness, it is highly unlikely that such views would have been offered in a formally structured and recorded

interview for reasons already discussed, and of course anonymity was requested in most instances.

The most unusual case was that of Singapore, where it was very difficult to find anyone willing to speak openly, and even more difficult to find anyone willing to question the official “party line”. This could be attributed to the short period that I spent in Singapore, although it was suggested to me by other researchers that even if I had spent longer I would still have had difficulty finding opinions which in any way could have been construed as critical of government policies and plans. My research in Singapore involved mostly observation and collecting government and academic publications. Unlike Bangkok, there is a relatively large amount of critical research on Singapore’s industrialisation and development in general, so this helped to compensate. In addition, a source of critical comment was provided by the “Forum” page of the *New Straits Times* newspaper. Although the paper is owned and controlled by the government, comment and criticism on certain topics like the functioning of the transport system is tolerated in this letters-to-the-editor page. This has become an important, officially-sanctioned form of “feedback” for the PAP-state. The ruling regime allows the letters page as a channel for citizens to express opinions and voice frustrations in a way that can be carefully managed. Also, it is linked to the performance of bureaucrats and administrators, who are required to respond directly to letters relevant to their area within a few days. Another source of information about the actual (as opposed to idealised) planning processes in Singapore was a set of consultants’ reports released in the early 1990s. These documents, which were part of a debate over the planning of a mass transit system, shed light on an otherwise opaque process of planning and decision-making. Clearly, this research confirms that more democratic politics results in more complete and accessible information. Reporting on Singapore’s 2001 general election, while typically restrained and controlled, nonetheless revealed some of the interests involved.

Thus, in each of the cities there were unique challenges for research on questions surrounding interests which are inherently political, in the general sense of who

gets what, how much, and how. These challenges were related to the overall characteristics of the politics and organisation of the societies and consequently the simple act of seeking what is essentially sensitive information provided a learning experience in each of the cities. A limitation of the methodology is the inherently high degree of subjectivity which was reinforced by the unequal periods of time spent in each of the cities. Serendipity played a role in the field research, as did a high level of dependence on personal contacts and relationships. While focusing on one city would have allowed for a much more in depth and complete study, three cases were required in order to draw some comparative conclusions. In spite of these difficulties, the case studies that follow have a level of detail and contextual information that provides a solid basis for the analysis.

## **BANGKOK: ORDER AMIDST CHAOS IN “DETROIT OF THE EAST”**

### **5.1 Introduction**

Bangkok’s infamous urban transport system is commonly described as disastrous and chaotic. Like many mega-cities in the developing world, the overall efficiency and productivity of the system is low, while the negative impacts of the system on society and the environment are high. Particularly to observers from cities in industrialised or developed nations, the urban transport system can appear random, disorderly, confusing, and irrational. However, this case study of the actors, actions, and their interests which follows suggests that there is a form of order and coherence to the system. The overall circulation system which has emerged after a period of rapid growth facilitates fast motor vehicle movements over long distances for a minority who own cars and can afford to pay the tolls to use the high speed roads. Notwithstanding rapid motorisation and an overall high level of motor vehicle ownership, in the early 1990s about one third of all work trips were made on non-motorised transport (Punpuing and Ross, 2001). Motorcycles, taxis, and a range of motorised “paratransit” operators provide a functioning but poor quality service for the majority of the population. The wealth of Thailand’s elite has increased, while environmental conditions and quality of life for the majority, and particularly the poor and marginalised, have declined.

This state of affairs is certainly not unique to Bangkok; most of the mega-cities of the developing world and cities such as Jakarta and Manila in Southeast Asia have a similar form of organisation. Where Bangkok differs from many of these cities of the developing world is that it was never colonised by a European power. In many of the institutions that shape Bangkok’s transport, there is a high degree of historical continuity, which is lacking in other Southeast Asian capitals because major disjuncture occurred when European colonial powers relinquished their colonies to rule by local citizens. Notwithstanding historical continuity, identifying discrete collective activities in the case of Bangkok is difficult, at least

partially because Thailand's politics is fractious and there are regular changes in the political leadership. Since 1970 there have been seventeen governments led by fourteen different prime ministers, three military coups (1976, 1977, 1991) which led to a change in the government and a number of "unsuccessful" or attempted coups, two popular uprisings (1973 and 1992) and two incidents of large scale state violence against civilians in central Bangkok (1976 and 1992). In addition to the complexity of Thailand's political economy, there is a pronounced lack of critical analysis on the processes shaping Bangkok's growth and related problems.

The events that are analysed in this chapter took place against a backdrop of major events in Thailand's history. Much of the focus is on a period of economic boom which lasted for approximately a decade, from the mid-1980s until the mid-1990s. It was followed by an economic crisis that began in mid-1997 and lasted until 1999, although Thailand is still recovering. The period of Bangkok's boom is significant because it was during this period that the economy and population grew rapidly and pushed Bangkok into the ranks of "middle income mega-cities" of over 10 million inhabitants. Between 1990 and 1996, Bangkok's economy grew at an annualised rate of 17.2% (Webster, 2000) and this growth drew in migrants from rural areas, neighbouring nations, and from developed and developing nations around the world. Public policies and city planning played a limited role in shaping changes, but motorisation and automobile dependent sprawl of Bangkok were facilitated indirectly by the actions of elected and non elected decision makers.

Although the main intent of this chapter is to describe and reveal dynamics of the urban transport system in the last thirty years, it is important to first revisit some earlier events. The first section of this chapter covers some aspects of Bangkok's historical development from its founding as a capital until it became more firmly drawn into a globalising economy in the mid-nineteenth century. Following this brief introduction, it discusses early efforts to facilitate motorisation.

### **5.1.1 Bangkok's early transport history**

When Bangkok was founded on the east bank of the Chao Phraya river in 1782 as the new capital of the Kingdom of Siam by King Rama I (Phra Phutthayotta, reigned 1792-1809), it was carefully planned by royalty and religious leaders as the physical articulation of cosmos and world (Evers and Korff, 2000). This differentiated Bangkok from all of the other Southeast Asian capital cities, which were founded by European nation-states as centres for administration of surrounding territories from distant European capitals and elites (Evers and Korff, 2000). In addition to its ceremonial and religious functions, Bangkok served as a centre from which an indigenous elite led by kings of the Chakri dynasty established control over a wide territory and its inhabitants.

For close to one century since it was founded, movement in Bangkok, a city next to a river on an alluvial flood plain, was by human-powered water and land transport. The Chao Phraya River, its tributaries, and an extensive canal network built under royal direction provided the most important routes during this water-based and walking period (Poboorn, 1997). In the central area surrounding the palace and nearby residential and commercial areas, canals were used for everyday movement, and some roads were built, mainly for ceremonial purposes. All large scale physical construction works were undertaken by the royal family and nobility. In addition to canals in and around the built-up area of the small city, canals were dug to previously uninhabited areas of Bangkok, its outskirts and the central plains of Thailand. The population of Bangkok expanded rapidly as peasant agriculture under the capital's control expanded, and as workers and traders migrated from China and other nations and territories.

Thailand's independence and Bangkok's place as an indigenous, but at the same time cosmopolitan city, were established over a century ago. One way that indigenous control based in Bangkok was maintained in spite of the growing presence of European imperialists throughout nineteenth century Southeast Asia was through the signing of trade treaties. An extensive trade treaty (the Bowring Treaty) was signed between King Rama IV (Mongkut, reigned 1851-1868) and

the British, and was followed by similar treaties with other important trading nations (Phongpaichit and Baker, 1995). In addition to signing trade treaties, Kings of the Chakri Dynasty ceded substantial outlying territories under their control to the British and French in order to maintain Siam's sovereignty. These changes further incorporated Siam into a global economy and international trade networks. Unlike in the Southeast Asian colonial states, the Siamese polity and economy remained under the control of the indigenous elite and European businesses did not penetrate Siam to the extent they did in Southeast Asia's colonial states (Phongpaichit and Baker, 1995). Instead, most business activity and wealth in Siam was controlled and appropriated by the Privy Purse Bureau, which had been established early in the nineteenth century to handle payments to the royal household, and later used to finance overseas education of members of royal and noble households (Phongpaichit and Baker, 1995). Before 1850, the land taxes and five per cent of other revenues went to the Privy Purse Bureau (Ibid.).

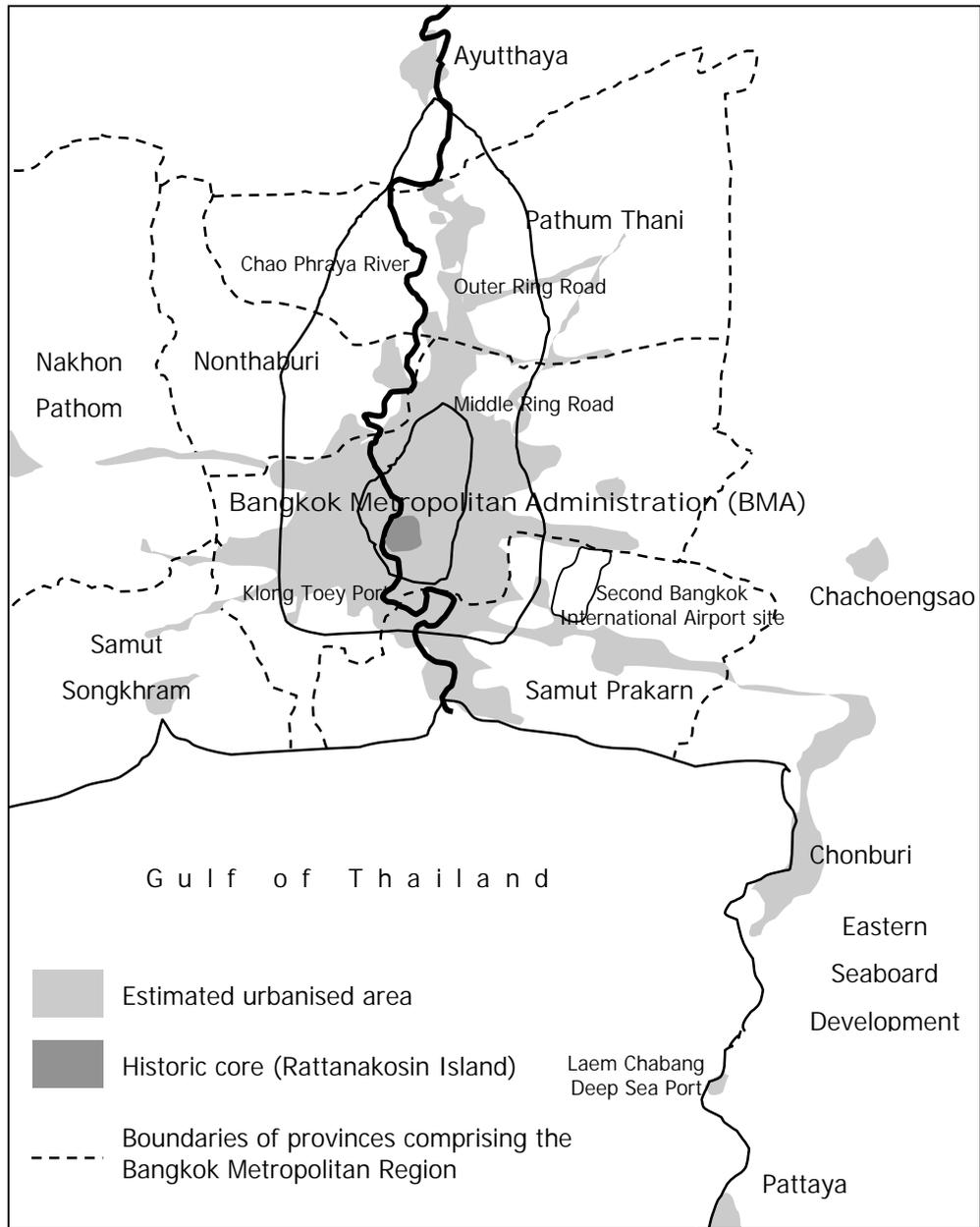
In 1868, a transport modernisation period began with the ascension to the throne of King Rama V (Chulalongkorn, reigned 1868-1910) and increasing contact with Western nations (Poboon, 1997). One change was the growth of terrestrial Bangkok to accommodate a "commoner" population in addition to the royalty, nobles, and foreign traders who had previously been the exclusive occupants. Another was the introduction of new transport technologies by European companies which entered into private ventures with the Privy Purse Bureau (PPB). For, example, a Danish company received a concession to build and operate a 17 kilometre electric tramway which was inaugurated in 1892, earlier than any other nation in East and Southeast Asia.<sup>23</sup> A Belgian company later included and then took over Danish tracks for a total of 49 kilometres at the peak of tram development in Bangkok. Bangkok's first electrified heavy railway, 21 kilometres from Pak Nam to outer port at Samut Prakarn, began operations by a

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<sup>23</sup>Bangkok's system was followed by Japan's Kyoto electric tramway (1894) and Batavia's electric tramway (1899) (Nomura, 1996).

Belgian company in 1893 (Figure 5.1). While by this time motor vehicles were operating on city streets, they were few in number. Nonetheless, under King Chulalongkorn, road construction accelerated and over 120 new roads were built (Askew, 2002).

**Figure 5.1 Bangkok and its environs**



By 1890 the Privy Purse Bureau had developed a new function as the palace's investment arm (Phongpaichit and Baker, 1995). King Chulalongkorn invested

many Privy Purse Bureau funds into opportunities created by the expanding rice economy and urban growth: rice mills, barge transport, railways, shipping, canal-building, construction, and land development. In the 1890s, the PPB was a major investor in land development through companies such as Siam Land, Canals, and Irrigation Company, which developed tracts of land to the north of Bangkok at Rangsit (Phongpaichit and Baker, 1995). The PPB was also a major investor in the first locally-owned bank, the Siam Commercial Bank (Phongpaichit and Baker, 1995). In Bangkok, shop-houses and markets were built by the PPB, which also capitalised on construction activities by forming the Siam Cement company, which entered joint ventures with European and Chinese companies requiring cement for construction projects (Phongpaichit and Baker, 1995). By the end of King Chulalongkorn's reign in 1910, land ownership was the basis of the monarch and royal family members' wealth (Askew, 2002).

In addition to the King, other members of the royal family and court participated to varying degrees in investing in land development and services for urban Bangkok (Phongpaichit and Baker, 1995). Prince Narathip, a son of King Rama IV (Mongkut) invested in tramways in collaboration with the Privy Purse Bureau and Chinese merchants (Phongpaichit and Baker, 1995). In 1930 a Danish construction company, Christiana & Nielson (Siam) was founded with the cooperation of the East Asiatic Company and the PPB. Early projects by Christiana & Nielson (Siam) included one of the first concrete roads in Bangkok (Tripetch Road) as well as Klong Toey port, three bridges over the Chao Phraya River, and a highway between Bangkok and the suburbs.

A large political upheaval in the Kingdom of Siam occurred in 1932, when the absolute rule of the monarch, which had predominated for approximately 500 years, was brought to an end (Sukatipan, 1995). The change in rule was brought about by a coup d'état resulting from conflict between the royal-aristocratic elite and an emerging commoner-bureaucratic elite (Sukatipan, 1995). In the wake of the abolition of the absolute monarchy, Siam became a constitutional monarchy and in 1939 was re-named Thailand. Following the 1932 coup, the royal property,

much of it accumulated around the turn of the century, was managed by Thailand's Finance Ministry (Phongpaichit and Baker, 1995). From 1935, when King Rama VII (Prajadhipok, reigned 1925-1935) abdicated, until the 1950 coronation of King Rama IX (Bhumibol Adulyadej, reign 1946-present), Thailand had no reigning, adult monarch in residence (Bowie, 1997).

## **5.2 Facilitating early motorisation**

Following the Second World War, Thailand was ruled by military leaders and this period marked the beginning of actions, particularly big transport infrastructure projects, which came to shape changes to urban transport, and most dramatically to facilitate motorisation. After a military coup in 1947, soldiers forming the core of the post-coup regime sought to restore ties between the military and the monarchy by increasing the King's powers and handing back control of property (including almost one-third of pre-war Bangkok) to the King (Phongpaichit and Baker, 1995). The coronation and subsequent rise in stature and popularity of King Rama IX, Bhumibol Adulyadej, coincided with growing US involvement in Southeast Asia and later by the return of Japan to Southeast Asia. In the immediate post-war period Southeast Asia became an important theatre of the Cold War between the USSR and the USA.

In spite of some concerns about fascist leanings and a lack of commitment to political and economic modernisation (i.e. from the US perspective, of liberal democratic forms and capitalist development) within Thailand's military and élite, the US viewed Thailand as anti-colonial proof that Southeast Asians were capable of ruling themselves (McVey, 1995). The US leadership drew a contrast between Thailand and other Southeast Asian nations, which were the sites of anti-colonial struggles for independence and the creation of national identities out of disparate social and economic groups. From the US government's perspective, supported by academic research, Thailand was pro-Western and stable (McVey, 1995). While the Kremlin in Moscow supported Communist China and North Vietnam; the Pentagon in Washington supported Thailand and South Vietnam. Beyond Thailand's borders the USA's Cold War strategy for Asia came to influence

changes in Thailand, including the growth of Bangkok's population and industrialisation. Initially, the Korean War in the 1950s had provided Thailand with an export boom, and the US Strategic Air Command was building long runways in Thailand as a prelude to containing China's southern flank (Warner, 1996).

Over a two year period in 1957 to 1958 the World Bank prepared a report for the Government of Thailand on the prospects and policies for a shift from an economy and society based on agriculture to one based on industrialisation (IBRD, 1959). By that time the number of motor vehicles were increasing rapidly (Bongsadat, 1973), but from a low number and most were concentrated in a small area of central Bangkok.

### **5.2.1 Early highway building**

The scale of the report was national, and as a result the direct implications for urban passenger transport were minimal. However, the overall thrust did have a spatial impact by emphasising the expansion of Bangkok's port on the Chao Phraya River as well as specific consideration to "rehabilitating" transport and communications systems. The report, *A Public Development Program for Thailand* (IBRD, 1959) noted that in the early 1950s the US government was providing capital and expertise through its aid programme to the construction of highways. In general, the report recommended a greater quantity and quality of highways nationally, and improved quality (but not quantity) of railways, which while acknowledged as the most important means of transport at that time in Thailand's history, were viewed as declining in importance in the future. A common concern among the World Bank and US advisors was the low priority being given to highways by Thailand's government. In the view of a former US Aid advisor, roads in Thailand were mistakenly designed to "serve, and not compete with, the railway systems" (Caldwell, 1974:34).

In the late 1950s, the US Operations Mission in Thailand planned and built a national highway system radiating out from Bangkok. Subsequently, the

programme of highway expansion was taken over by the World Bank. While the early highways were built by American contractors, on-the-job training for Thais in engineering and construction was provided and necessary equipment was loaned to local contractors. Within years the road construction section of the civil engineering profession in Thailand went from non-existent to capable of handling large projects (Caldwell, 1974).

Highway building in Thailand's poor Northeast region, long ruled as a vassal state by the Bangkok-based Chakri kings, was interpreted by Owen (1964) as a harbinger of wealth and prosperity. The conclusions of the World Bank report were supported by academics who argued that by replicating the physical infrastructure of the USA and other "developed" nations, modernisation and development would occur in poor nations. Road infrastructure was emphasised as a means to facilitate mobility, which was viewed as inherently positive and intimately linked to economic development and progress. A transport specialist in Asia at the time enthused that the application of motorisation to all forms of transport was transforming life in Asia:

An indication of what transport modernisation can do for development can be observed in nearly all the large cities of the world and along many of the major intercity routes. In Asia the rickshaw and pedicycle are giving way to the truck, the bus, the motor scooter, and the taxi ... . On the Chao Phya in Thailand, ancient sampans are being pulled by diesel tows, and along the klongs of Bangkok fresh vegetables are propelled to market by outboard motor (Owen, 1964:7).

While not acknowledged by American analysts such as Owen, the highways being built in Thailand's Northeast were also serving US strategic goals of preventing the rise of Communist regimes in Southeast Asia. Perhaps most importantly, the highways were linking airfields which were being used by the US air force and Central Intelligence Agency (CIA) for covert bombing and intelligence operations in the region. In addition, these roads were intended to deliver prosperity through capitalist development and modernisation in Thailand's poorest region, where disenfranchised rural populations were sympathetic to the communists. In 1964 the Accelerated Rural Development Program was created and the first priority was building roads to provide access to rural areas for the armed forces and police in

the North and Northeast regions of the country where communist insurgents were active (Bowie, 1997). They also served as supply routes linking US military air bases established in Northeast Thailand from where US planes conducted reconnaissance and bombing of Vietnam, Laos, and Cambodia. However, among villagers there was little interest in having roads, which also caused displacement of farmers from rice paddy land without adequate compensation (Bowie, 1997).

Shortly after the World Bank had completed its mission, a Thai general, Field Marshall Sarit Thanarat took control of the national leadership in a coup d'état. The 1959 World Bank report noted this change in leadership and that during the first year of Sarit's leadership some actions corresponding with the Mission's recommendations had already been taken. The US government took an interest in Thailand's industrialisation, and President Kennedy wrote personally to Sarit asking him to study the document seriously (Phongpaichit and Baker, 1995). Notably, a new law governing foreign investment in Thailand had been promulgated, and a national planning and economic development agency under the office of the Prime Minister was established. The first three national five-year plans were written by advisers nominated by the US government and closely followed the World Bank strategy for Thailand's economic future (Phongpaichit and Baker, 1995). In addition, Sarit undertook a number of authoritarian actions to shape the development process:

Sarit abolished parliament and the constitution, outlawed political parties and unions, and founded a 'Revolutionary Party' and a highly authoritarian regime. Sarit's dictatorship was vigorous in repressing all opposition and, in addition to exiling political opponents, introduced summary executions of alleged communists, arsonists and others identified as opponents, while making economic development, rather than politics, the key to his rule (Hewison, 1997a:13).

The US military presence had been escalating gradually throughout the 1950s and 1960s, and with growing involvement in the war in Vietnam, the presence of the US military in Thailand expanded. In 1962 the Thai government of Sarit allowed US troops to be stationed in Thailand and it allowed the US to use airfields as bases for military missions flown over neighbouring countries (Bowie, 1997). The

strategic importance of Thailand was to lead to US expenditure between the mid-1950s and 1976 (when American bases closed), of nearly \$3.5 billion (Stubbs, 1994). Extensive economic aid to Thailand was justified primarily on the basis of the US government's interests in halting the spread of communism and ensuring the continued availability to the West of the area's natural resource reserves (Caldwell, 1974).

In conjunction with cooperating with the US military, Sarit raised the profile of the monarchy through newly resurrected rituals of the royal court which were given government support (Bowie, 1997). King Bhumibol also came to play a role in Thailand's capitalist modernisation which progressed through industrialisation and the expansion of private property. Particularly important to the US during the Cold War, King Bhumibol was vehemently against communism. In the late 1950s and early 1960s the King spent time meeting with foreign and domestic investors and promoting industrial development (Hewison, 1997b). The King strongly supported the strict authoritarianism of Sarit, who received legitimacy in exchange for supporting the King (Hewison, 1997b).

As with most monarchs around the world, Thailand's King has generally been conservative in his outlook, which influences his relationship with his subjects. King Bhumibol has discouraged government provision of welfare to the poor but has personally supported many individual projects and philanthropy to upgrade livelihoods in specific locations. Rural development projects have been personally initiated by the King in villages throughout Thailand's regional areas, and through this process a personalised relationship and bond is established between the King and his subjects. As a result, reverence for the King among virtually all Thais has grown to levels far greater than at any other point in the twentieth century. In addition to these good works in rural areas, the King has also influenced Thailand's politics and has provided a source of continuity with the past. Although Thailand is a constitutional monarchy, the King over the years has frequently stepped into the political process and has been called an activist monarch (Hewison, 1997b). He has also become the longest reigning of all the

Chakri Kings and at 55 years on the throne has become one of the longest reigning monarchs in the world.

Under Sarit, and with the active participation of King Bhumibol, a programme of import-substitution industrialisation was pursued, and considerable US support was channelled into Thailand. Much of the support was provided for highway-building. In the 1960s and 1970s the length of national highways in Thailand rose dramatically, in line with the national development plans which were prepared by World Bank and US advisors. While supervised by the Department of Highways, this work was facilitated by the cooperation of the National Economic and Social Development Board (NESDB),<sup>24</sup> Budget Bureau, and the Ministry of Finance. However, most of the design and construction work, much of which was financed by World Bank, bilateral aid, and the Asian Development Bank, was undertaken by private companies, both Thai and foreign (Caldwell, 1974). In addition, World Bank loans were used to boost the capital and capability of incipient industrial enterprises such as Siam Cement, owned by the Crown Property Bureau and identified as a flagship for industrialisation in Thailand.

### **5.2.2 The first Bangkok plan**

While the World Bank mission prepared a national public development programme for Thailand, a project to prepare a plan for the physical development of Bangkok and the institutionalisation of planning activities was initiated jointly by the Thai Government and the United States Operations Mission to Thailand. The overall plan was supportive of the USA-supported World Bank industrialisation programme and was imbued with modernist beliefs about transport which were largely uncontested at that time. These included the importance of facilitating movement by motor vehicles, the segregation of traffic by speed, and the removal of electric street cars. These recommendations were in line with the transformation of Bangkok from a canal-based city to a road-based

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<sup>24</sup> The NESDB was the institution created with the assistance of the World Bank to undertake national development planning: when first created it was the National Economic Board, but the Social was added later when the wider implications of “technical” and “economic” policies were realised.

city, already well underway at that time (Askew, 2002). They were also consistent with General Sarit's 1959 decree banning three-wheeled non-motorised cycles, the clearance of slum areas, and efforts to send migrants back to the countryside (Askew, 2002). At the same time, a compact urban pattern at as high densities as could be permitted, while still maintaining "decent standards", was recommended (Litchfield Whiting Bowne and Associates et al, 1960:68). A large scale road system was proposed as "...a major tool for the accomplishment of the policy of decentralization of the central city area by the creation of sub-centers and the planned dispersal and grouping of industrial activities" (Litchfield Whiting Bowne and Associates et al, 1960:89).

Establishing a pattern which largely describes the experience of most planning exercises in Bangkok since then, the plan was enthusiastically endorsed but not implemented:

In the absence of the necessary fiscal, legal and administrative infrastructure, the Plan has languished; Thai authorities refer to it when, by chance, a development project included crops up also in the traditional *ad hoc* approach, otherwise the Plan is ignored....  
(Sternstein, 1971:1).

Some of the plan's major infrastructure proposals, in particular a new international airport to the east of Bangkok and the removal of at-grade railway crossings in the urbanised area, were affirmed by Thailand's government as good ideas but as of yet, more than 40 years after being proposed, have still not been completed. Nonetheless, between 1958 and 1962, a number of proposals which were included in the *Greater Bangkok Plan*, including street construction and widening improvements and a regional highway from Bangkok to Saraburi, were constructed (Nims, 1963). In addition, the US government provided two city planning advisors to the Bangkok government. In a short report on the status and prospects of city planning in Thailand, one of the advisors noted a number of reasons why many of the improvements and measures proposed in the *Greater Bangkok Plan* and other documents had not been implemented. According to one city planning advisor, there were entrenched "obstacles to city planning in Thailand" which included:

1. An inadequacy of finances for the construction, as well as the overall planning, of public facilities.
2. Not enough trained personnel to do the technical planning work.
3. A scarcity of reliable factual data upon which to base long-range planning.
4. An inadequate legal basis for the effectuation of planning with respect to private land and private development.
5. Government organization and administrative procedures which are not easily coordinated for planning or for carrying out broad public programs.
6. A tradition of making decisions at the top without benefit of thorough staff study and technical advice.
7. A dependence upon the existence of strong individuals to carry out worthwhile public programs, rather than the establishment of permanent institutions, laws and standards to insure a high level of continuous effort.
8. A tendency to think of government employment as a way to individual security and status, rather than as an opportunity to use one's professional training for service to the people.
9. A lack of understanding on the part of responsible officials of the true nature and purpose of city planning.
10. A tradition of solving urban problems as separate and independent projects, when they arise, without reference to an overall plan (Nims 1963:5).

### **5.2.3 The first urban transport plan**

Between 1971 and 1975 German consultants carried out the first large-scale, multi-modal transport study and planning project on behalf of the German agency for international economic cooperation and the German Federal Ministry of Transport. In addition to the German team, World Bank transport economists participated in advising the team. The main problems identified were those of coping with growing motorisation:

There is relatively little road space in Bangkok, in comparison with its size and population. About 10% of the Inner Core Area is taken up with transportation use, compared with 20-30 per cent in the center of comparable western cities. Congestion, already serious, is increasing since road construction has not kept pace with the growing motorization of the community. However, despite growing motorization, about 90% of the population depend upon the public transport system which, at present, consists of 26 separate bus companies operating overcrowded, uncomfortable and unreliable bus services. Such traffic regulations as there are, are hardly enforced and the whole subject of the planning, regulation and control of traffic and transport in Bangkok is bedevilled by the fact that no less than 10

separate agencies are officially concerned with various aspects of the problem and that no overall authority exists to plan, set priorities and co-ordinate effort (F.H. Kocks KG and Rhein –Ruhr-Ing-GMBH, 1975:17).

The *Bangkok Transportation Study* investigated transport requirements for a number of land-use patterns and transport policies using a target year of 1990. Instead of providing a fixed master plan, the consultant concentrated on recommending a basic expressway and mass rapid transit network for 1990 (F.H. Kocks KG and Rhein –Ruhr-Ing-GMBH, 1975). The study emphasized that the structure of transport corridors in Bangkok favoured mass transit (“an ideal situation for the installation of a mass rapid transit [MRT] facility”, “very little alternative but to invest in an MRT system”) (Ibid.:41). In conjunction with mass transit, it recommended that private vehicle use be restrained, and that the dispersed land use pattern recommended by Litchfield Whiting Bowne and Associates et al fifteen years earlier be rejected on socio-economic grounds (Ibid.).

The study examined a number of conventional mass transit modes. The final report proposed that construction begin immediately on an elevated busway which could be upgraded to accommodate rail in the future:

The analyses demonstrate unequivocally that a bus MRT system is more economic for the community as a whole than a rail system. This should now be the strategy: At least for an initial period to operate by buses, to follow closely the development of passenger volumes, to prepare for timely conversion to train operation, if and when excess of practical capacities for bus operation can be expected.... Such a flexible system combines the advantages of both bus and rail: It can be constructed and introduced in relatively small portions, that is relatively quickly, and thus relieve traffic congestion rather rapidly; it requires considerably lower initial capital and maintenance costs, and it leaves the option open for a change to rail transit if and when traffic demand is approaching capacity limit of bus operation (F.H. Kocks KG and Rhein –Ruhr-Ing-GMBH, 1975:82).

Just as the *Greater Bangkok Plan 2533* (1960) served no practical purpose in influencing Bangkok’s growth, the *Bangkok Transportation Study* (1975) was also largely ignored. In fact, some actions which were subsequently taken were

contrary to the intentions of the plan. The main thrusts of the proposals were to improve public transport through the immediate implementation of an elevated busway project which would later be upgraded to rail. Another thrust of the project was that actions should be coordinated by one agency overseeing the planning of urban transport, rather than taken summarily by individuals. However, before the final report was released, a new state enterprise, the Expressway and Rapid Transit Authority (ETA), was established under the Ministry of the Interior to undertake the major transport infrastructure investments (but not overall public policies and planning) that had been proposed. In a sign of things to come, before the plan had been officially completed in 1975, studies by American consultants were underway on the feasibility, design and plans for a first stage expressway system in Bangkok.

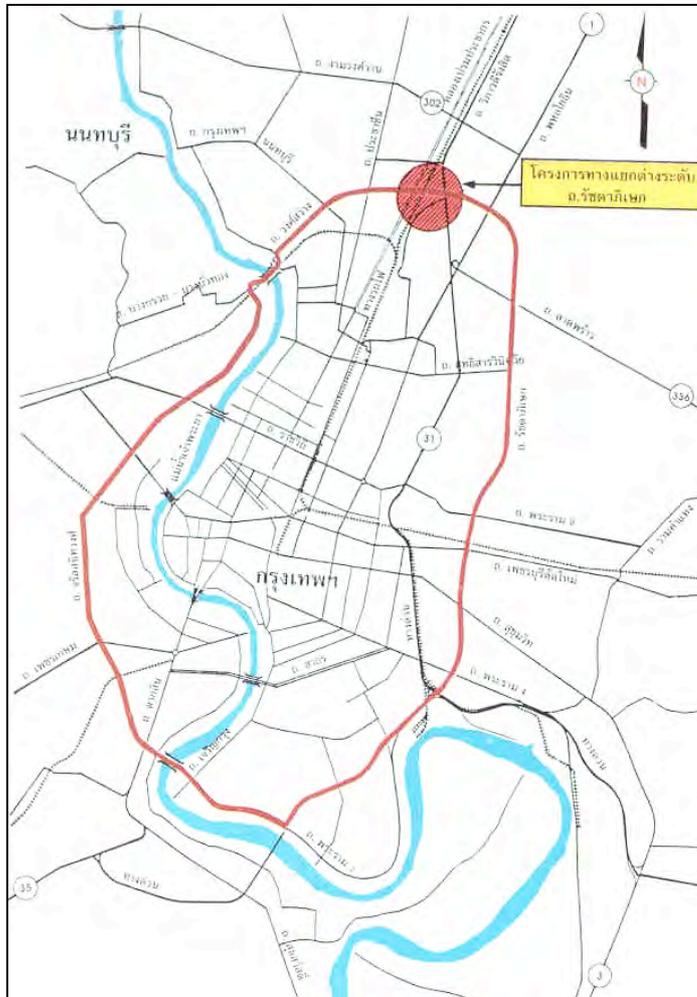
Although the plan had prescribed bus-based mass transit that could be upgraded to rail in the future, shortly after completion of the plan, the Cabinet decided that a rail mass transit project should be proceeded with. Clearly, the form of bus-based mass transit recommended had been in line with West Germany's industrial interests: the form of the busway was unconventional but would have accommodated a guided track bus system, which at that time was under development by a West German public-private consortium. Subsequent lobbying by Daimler-Benz AG of Germany to persuade the authorities in Bangkok that its "O-Bahn" system (a guided track bus system developed with the support of the West German government) would be a cost-effective solution, failed (*Financial Times of London*, 1982). It appears that the plan had no impact on the actions of the government in affecting urban transportation in Bangkok. The ideas for expressways and elevated rail included in the plan had apparently been around before and were incorporated into the recommendations. A politician who served in numerous governments and as a Minister of Transport in the 1980s, and more recently as Governor of Bangkok, has claimed that he introduced the idea of elevated expressways and rail to Bangkok, after attending university in Chicago and observing the extensive expressways and elevated trains there in the 1960s (Sundaravej, 2000).

Following the decision to proceed with rail mass transit, other German consultants working with Swiss and Thai counterparts made a detailed comparison of alternative mass transit systems (Bangkok MTS Consultants, 1978). In this study it was argued that the incremental improvements being made to road transport would reduce congestion but would not provide long term solutions to problems such as low travel speeds for buses, which were caught in traffic congestion (Bangkok MTS Consultants, 1978). A number of alternative alignments for mass transit were identified along with a number of bus and rail mass transit systems. The study recommended selection of a heavy rail system over a bus rapid transit system on the basis of total costs, passenger capacity, standards of reliability, safety, comfort and convenience, and air pollution (Bangkok MTS Consultants, 1978). This was followed by more detailed rail system designs which were completed by the early 1980s.

However, while the *Bangkok Transportation Study* had emphasised mass transit and institutional coordination, the ETA was spending most resources on developing its “own” expressways with little coordination with other public agencies (as well as private land developers) which were building smaller roads. In addition, in 1971 King Bhumibol re-asserted the traditional royal role in shaping Bangkok by initiating a middle ring road project called Ratchadapisek Road (Figure 5.2). While this 55 kilometre project was initiated at the same time as the *Bangkok Transportation Study* was being prepared, it was not mentioned or factored into the analysis and plan. The project involved building elevated road sections, widening roads, and constructing “clover leaf” interchanges at various intersections in order to increase the speeds of motor vehicles. It represented a different direction for Bangkok’s urban transport than that proposed by the foreign transport experts, and due to the public resources required, it constrained the ability of government agencies to carry out other projects and initiatives. Similarly, the ETA which had been established to oversee development of mass transit and expressways (which were to be partially used for busways according to the plan) proceeded to begin building an expressway designed for private motor

vehicles and truck traffic. In 1978 the ETA began building the first section of the 27 kilometre First Stage Expressway, which was completed in the early 1980s.

**Figure 5.2 The middle ring road**



Source: Bangkok Metropolitan Administration and the Petroleum Authority of Thailand (1993)

As the ETA began the First Stage Expressway in 1978, the Bangkok Traffic Management Program (BTMP) was initiated as part of a loan agreement between the World Bank and Thailand's government, and incorporated ideas for a low-cost approach which had been pioneered in Kuala Lumpur just a few years previously. The project examined traffic control and measures to increase the speeds and relative attractiveness of buses. The results of the BTMP included the installation of traffic signals controlling 48 intersections, the introduction of 95 kilometres of

with-flow bus lanes, which were later incorporated into a one-way traffic flow system with contra-flow bus lanes, and training of traffic police officers. The programme led to the 1978 creation of the Office of the Commission for the Management of Road Traffic (OCMRT), one of the first attempts to enhance coordination by creating an overarching committee, chaired by high ranking officials and Cabinet ministers. Initial efforts were directed toward a road pricing scheme, which ultimately failed due to opposition at high levels to the idea of restricting the use of motor vehicles of the wealthy. The well-resourced programme had some success at introducing bus lanes. While road pricing would have increased the cost of using the mode of transport used almost exclusively by the wealthy at that time, the bus lanes in addition to expediting the movement of buses, provided clear routes for travel in the congested city, of official motorcades used by government Ministers and high level officials.

### **5.3 Industrialisation and vehicle manufacturing**

From 1978 to 1988, Thailand was ruled by what has been described as a quasi-democratic regime, led by a military general, PM Prem Tinsulanonda, who gave greater powers to bureaucratic organs in economic development policy and planning (Sukatipan, 1995). During this period the National Economic and Social Development Board (NESDB) under the Office of the Prime Minister and technocrats, came to play a more important and active role in Thailand's industrialisation. Neo-classical economists have celebrated the 1980s under PM Prem as a period in which an alliance between the economic policy technocrats and the senior military was re-established in order to achieve "structural adjustment" toward a more liberal and free market economy (Muscat, 1994).

In the 1960s and 1970s industrial activity had been growing in and around Bangkok, particularly to the south and southeast in neighbouring Samut Prakarn province (Figure 5.1). In 1962 an oil refining complex in Chonburi province further to the southeast of Bangkok was announced, and by the late 1970s there was interest in utilising an airstrip and a port constructed by the then-departed US military. There was also a decision in 1978 to bring gas from offshore to a

refinery to the southeast of Bangkok. However, this was accelerated at the beginning of the 1980s, when industrial development covering a massive area of central Thailand to the southeast of the BMA was initiated by the government of Thailand through the Eastern Seaboard Development Project.<sup>25</sup> According to the government agency overseeing the infrastructure development in the region, the concept was initiated by PM Prem Tinsulanonda in response to a need to decentralise activities from central Bangkok to reduce traffic congestion, address deteriorating environmental conditions, structure previously unplanned, haphazard growth, provide job opportunities for rural workers, and promote new industries and attract foreign investment (NESDB, 1992). Later in 1981 the project was approved and integrated into the five year plan.

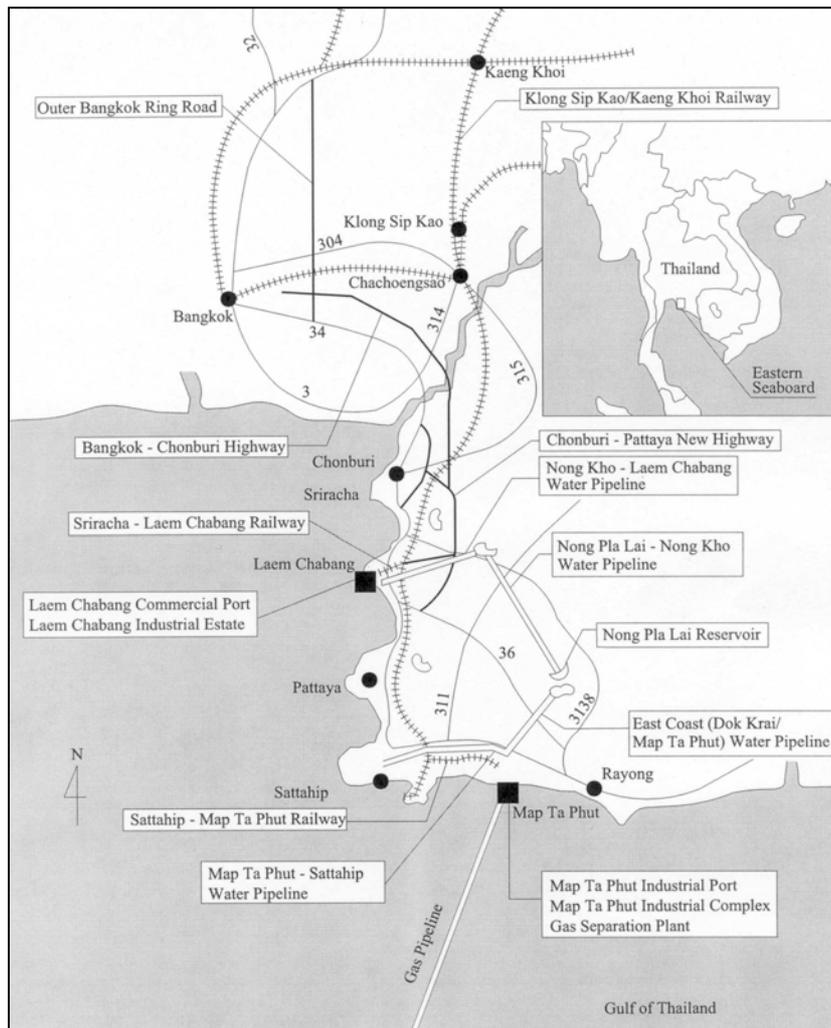
In addition to the establishment of PM Prem's rule, which placed greater importance on the role of technocratic managers within the bureaucracy, the inauguration of the Eastern Seaboard project coincided with the decline of US hegemony throughout much of Southeast Asia, and the rise of Japan as an economic power in the region. The boom created by the Korean War and the Cold War laid the foundations for Japan's industrial modernisation which led to its emergence as the regional economic power (Stubbs, 1994). While the Eastern Seaboard project may have been initiated by Thailand's national political leadership, it was Japan's developmental state which made its realisation possible and which coordinated its execution. Just one month after an Eastern Seaboard Development Committee headed by Thailand's PM Prem was established, the Japanese PM announced the intention of Japan to cooperate for the development of the Eastern Seaboard Program (Ariga and Ejima, 2000). Over a twenty year period the Japanese government led the planning (through the Japan International Cooperation Agency) and provided low interest loans (through the Overseas Economic Cooperation Fund) to Thailand's government for virtually all basic industrial infrastructure (16 projects in total) in the Eastern Seaboard region (Ariga and Ejima, 2000) (Figure 5.3). The implementation of the project through

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<sup>25</sup> Isolated projects such as construction of a deep sea port at Laem Chabang had already been proposed in the 1970s (Bangkok MTS Consultants, 1978).

the 1980s was closely coordinated through Thailand's National Economic and Social Development Board, and this period has been judged by many as one in which technocratic expertise prevailed (Muscat, 1994).

**Figure 5.3 Japanese-financed industrial infrastructure**



Source: Ariga and Ejima (2000)

This infrastructure included three regional highways (the Outer Bangkok Ring Road, Bangkok-Chonburi Motorway, and the Chonburi-Pattaya New Highway) which were built by the Department of Highways in order to facilitate faster vehicle movement to Bangkok's east. These further encouraged the sprawl of

automobile dependent development over a much larger area which was to eventually spread all along the Gulf of Siam.

Between 1984 and 1986, Thailand's economy was in a state of crisis (along with other economies in the region), and in the wake of the crisis, changes were made which would shape an economic boom to follow. The World Bank, which was providing structural adjustment financing at the time, participated in shaping changes. This involved a shift from import-substitution industrialisation to export-oriented manufacturing and liberalisation of capital flows, finance, and banking. PM Prem supported these changes, which in addition to cementing the role of technocrats in the Thai government, also led to a re-orientation of conglomerates and the emergence of new business groups (Phongpaichit and Baker, 2000:21). The ESB projects, some of which had been held up for financial reasons, were expedited.

While providing the capital, expertise, and technology, Japan's dominant role in the Eastern Seaboard project did not go unchallenged. In 1984, Thailand's Ministry of Communications, which was supervising construction of the deep sea port, complained that the Japanese lender was spending the money almost exclusively on Japanese engineering and construction firms (Hatch and Yamamura, 1994). However, the Japanese government threatened to cancel future loans to Thailand, and this pressure was sufficient for Thailand's government to reverse the suspension. Another conflict arose over the expenditure on a fertiliser plant which was scaled back partly on the recommendation of the World Bank, because of concerns it had about excessive spending (Unger, 1998).

Notwithstanding Japanese dominance, some Thai companies did become involved, most notably the Siam Cement Group which entered into joint ventures with Japanese and South Korean partners and aggressively expanded in the petrochemicals business. These industrial joint ventures were organised predominantly on a turn key model. The foreign partners with technology and expertise built and engineered the plants and processes which were turned over to

the Thai partner to run, although often with continued participation of the foreign partner. While Japanese firms dominated in the 1980s, more US, European, Korean, and Taiwanese firms became involved in the 1990s. This was partially a result of the Thai government establishing rules enabling greater participation of other foreign firms in order to prevent monopolisation by Japan (Muscat, 1994). Thailand's government also participated through a state-owned enterprise, the Industrial Estate Authority of Thailand (IEAT), and some private companies which provided industrial infrastructure and serviced industrial estates located in semi-rural locations throughout the Eastern Seaboard Region.

Another industrial sector which rose to prominence in the Eastern Seaboard was the manufacturing of motor vehicles for both export and domestic use. Links between Japanese automobile manufacturers and Thailand had emerged with the growth of the automobile industry in Japan following World War II. In 1952, the Sino-Thai Phornprapha family which was running a scrap metal and spare parts business, began importing Nissan cars from Japan, and by the 1960s the company was assembling the cars out of parts shipped from Japan (Phongpaichit and Baker, 1995). The family's business took off when the government decreed that all taxi firms must purchase Phornprapha Nissans (Ibid.).

In addition to automobiles, motorcycles and motorised three wheel vehicles from Japan were imported. Beginning in 1959 Daihatsu of Japan began exporting motorised 3-wheel vehicles to Thailand. The Japanese vehicles were given a local name, the "tuk tuk", and by the 1990s there were 7,400 of the vehicles plying Bangkok's streets, mainly in the BMA area where non-motorised pedicabs were banned.<sup>26</sup> Thai companies such as Polasith now manufacture tuk tuks which are no longer made in Japan, although the manufactured engines for the tuk tuks continue to be imported to Thailand, where they are assembled. In 1964, the Phornprapha family started a joint venture with Yamaha to manufacture

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<sup>26</sup> The pedicabs were not dumped into the ocean as in Jakarta, but ended up serving short distance trips in the suburban centers of the provinces surrounding the BMA and in regional cities.

motorcycles and later another branch of the Phornprapha family went into business with motorcycle manufacturer Suzuki (Phongpaichit and Baker, 1995).

Japan's motor vehicle manufacturing in Thailand is part of a complex network of industrial clusters which are spread throughout Southeast Asia and which are strategically controlled from Tokyo. By 1993 Japanese affiliates accounted for 94 percent of automobile manufacturing in Thailand (Hatch and Yamamura, 1996), although in the mid-1990s some American and European automobile manufacturers began to set up operations in the Eastern Seaboard. In 1994 the head of Ford's business development from Detroit surveyed an area of the ESB and decided on a site for an automobile manufacturing plant. The operations of Ford and other manufacturers were established in three industrial estates privately built and owned by Hemaraj Land and Development, which was incorporated in 1988 and which has strong links to the US. The Ford executives from the head offices named the Hemaraj estate the "Detroit of the East" and subsequently policy-makers and the media (e.g. *Bangkok Post*, 2 August 2001) have applied the slogan with a degree of reverence to all of Thailand, apparently indifferent to Detroit's currently poor reputation around the world.<sup>27</sup> In 1996, General Motors began construction of an assembly centre in Hemaraj's Eastern Seaboard Industrial Estate. The plant, constructed with the participation of Christiana & Nielson (Thai) owned by the Crown Property Bureau, was opened and began producing cars in 2000, mainly for export to South America, Europe, Australia, Africa, and the Middle East. Hemaraj became the largest industrial estate developer with three industrial estates where Ford/Mazda, General Motors, Mitsui, Mitsubishi, General Electric, Nippon Steel, Toyota Group, and numerous others in the automotive, plastics, polymer, steel, building materials, electronics and white goods industries were established. The private estates are jointly managed with the state enterprise Industrial Estate Authority of Thailand and promoted by the Board of Investment.

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<sup>27</sup> "Detroit...has become an astonishing case of industrial dereliction; perhaps, before long, the first major industrial city to revert to farmland" (Hall, 1998:499).

One of the stated objectives of the national government's Eastern Seaboard project was to reduce haphazard growth and environmental problems in the Bangkok Metropolitan Administration (BMA).<sup>28</sup> Paradoxically, these efforts have been justified on the basis of decentralisation, but in fact they have reinforced the predominance of Thailand's Bangkok-centred region, although now sprawling over a larger area. A critical account is that the Eastern Seaboard has become an "unmitigated disaster of formless urban sprawl over a massive area" (Pike, 1998). Industrial enclaves and estates on the outskirts have also necessitated long commutes. A 1993 survey of commuting by industrial workers on the northern outskirts of the Bangkok metropolitan region to one industrial estate found evidence of extraordinarily long-distance commuting between homes and jobs (Foo, 1993). There are more sanguine assessments, but these invariably focus on manufacturing output and industrial growth of factories, rather than the quality of life for people in and around Bangkok. Virtually all of Thailand's industrialisation occurred in the extended Bangkok metropolitan region including the Eastern Seaboard (Greenberg, 1994). It was estimated that in the 1990s the extended Bangkok region was between 30 and 50 times more populace than the next largest city, which in the 1990s was Nakhon Ratchasima with less than half a million inhabitants. However, Nakhon Ratchasima became important for political reasons in the 1990s as it was the political base of politicians from Thailand's Northeast Region.

#### **5.4 Democratisation and road contracting**

Under pressure from various groups and political parties demanding a Prime Minister from the ranks of elected MPs, in 1988 Prem Tinsulanonda, the un-elected incumbent, stepped down (Hewison, 1997a). An election that followed led to the prime ministership of a politician and former military general Chatichai

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<sup>28</sup> The BMA is the local government and decision making body, although its budget and operations are highly constrained by the national Ministry of Interior. Since the 1980s the governor and district councilors have been elected. The BMA does not include much of Bangkok's suburban and outer urbanised areas, which are administered by surrounding "provinces" and which have governors appointed by the Ministry of Interior. There is no form of regional governance or statutory coordination and planning, although a Bangkok Metropolitan Region Committee was formed in the 1990s and has met on a few occasions.

Choonhaven, who hailed from the Northeast, Thailand's poorest region. While PM Chatichai headed a right-wing party affiliated with paramilitary groups, his administration presided over substantial changes, and in particular the transfer of decision-making from the civil and military bureaucracy to elected politicians (Ibid). This led to a shift toward a more democratic regime and the rise of provincial businessmen, particularly from provinces outside of the Bangkok Metropolitan Region, to top political posts. At the same time, the influence of technocrats and the Bangkok-based elite waned.

Thailand's economy grew rapidly during 1989-1991 and there was much speculation about high levels of corruption in the Chatchai government, particularly surrounding a number of transport mega-projects for Bangkok. Certainly this was not new: "As patronage has always been the cement to cobble together fragile coalitions of otherwise competing elite factions, control over Bangkok makes the difference in national power equations" (Rüland and Ladavalya, 1996:31-2). The US involvement in road and highway building had left Thailand with a relatively high capacity for engineering and constructing roads, and public road building had become a well-established means of personal enrichment for politicians and their families. Since the 1980s, businessmen specialising in supplying government projects had become "spectacularly wealthy" (Phonphaichit and Baker, 2000:36), but it was during the Chatchai government that this activity accelerated to a higher level. New politicians, with power bases outside Bangkok, began competing for contracts and control over lucrative infrastructure projects which in previous decades had been under the control of the Bangkok-based elite. At the time of the Chatchai government, the economy was growing extremely rapidly, and the size and value of these activities grew. In 1989 the Chatchai government awarded a contract for the Don Muang elevated tollway linking the airport to the central city to a well-connected group, despite opposition from state officials (Unger, 1998). The group included the owner of a Bangkok, central city property developments, and they formed an agreement with German and French construction companies to undertake the building of the tollway, which eventually opened in 1995.

In February 1991, the military staged a coup against the Chatchai government and installed an interim administration under a new PM, Anand Panyarachun, who was a member of the Bangkok élite. The official reason given by the coup leaders, who were initially supported by King Bhumibol, was that Chatchai and his Cabinet were becoming “unusually wealthy” as a result of excessively corrupt activities.<sup>29</sup> In contrast to the Northeast-based Chatchai Cabinet, which included a number of relatively un-educated and unsophisticated “provincial bosses”, PM Anand had been educated at Cambridge and had been a career civil servant in the diplomatic service before he became a director of Saha Union, an industrial conglomerate, and a member of the board of directors of Siam Commercial Bank, owned mainly by the Crown Property Bureau.

After just over a year with Anand as Prime Minister, one of the generals who had led the coup the previous year, Suchinda Kraprayoon, assumed the post of Prime Minister. The public widely disapproved and a popular uprising took place, led by the elected governor of the BMA, Chamlong Srimuang. After a day of violence in May 1992 when the military shot unarmed demonstrators, King Bhumibol intervened and mediated an outcome in which Anand was appointed again as an un-elected interim Prime Minister until elections were called later. The short period of PM Anand’s government that was to follow had significant impacts on Bangkok’s urban transportation and land use, although through means more indirect than urban transport policy and planning. In particular, a number of measures designed to liberalise Thailand’s economy were introduced, and the implications of these for urban transport are discussed in later sections of this chapter.

The Anand government was succeeded by an elected government (under PM Chuan) which had many technocrats and economists in high positions and which followed up on some of the financial liberalisation measures. However, many of

the “provincial bosses” who had risen to prominence during the Chatchai administration continued to have influence within the government. After a land reform scandal brought the Chuan government down, a succession of provincial bosses returned to ministerial positions.

One of the key figures was and continues to be the secretary-general of Chatchai’s party, Suwat Liptapanlop, who holds a masters degree in traffic engineering from the US and whose family owns Prayoosavira, a contracting firm. In 1988, Suwat had been elected with the assistance of local businessmen in the Northeast province of Nakhon Ratchasima. Under this government, projects in Nakhon Ratchasima were accelerated, and Suwat’s family’s company was awarded part of the contract for widening the Friendship Highway (originally built by the US military) between Bangkok and Nakhon Ratchasima. Suwat continued to play a significant role in successive governments through the 1990s. Through newspaper reporting on Suwat’s campaign during the relatively democratic 1996 election,<sup>30</sup> the links between politics and road contracting were laid out. During the 1996 election campaign, he “...pointed out that roads are universally accepted as a sign of development in the modern world” and that his constituents in the province of Nakhon Ratchasima would receive “free” road repairs. According to the newspaper article:

Suwat’s constituents are lucky as his family runs a major construction firm. The MP said he has always helped rural communities deal with problems such as minor road repairs free of charge, by using equipment from his family’s company. He explained that sometimes it took the government years to allocate funds to such work. ‘Not all politicians can do what I do for my constituents. But I see it as a public service I willingly do for the people,’ Suwat said. ... Still, it seems that not all MPs campaign for road projects out of altruism – or the hope of re-election—alone. A large number of MPs, like Suwat, also own or hold shares in construction companies which take on

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<sup>29</sup> “In this country, it’s quite normal to dip into the stream as it goes by,’ said a Western diplomat who requested anonymity. ‘But Chatchai’s government went even further—they tried to divert the entire stream’” (*Maclean’s*, 1991:47).

<sup>30</sup> The election was held after a no-confidence debate felled the government of the provincial boss Banharn, whose government had been popularly nicknamed the “contractor’s government” because the PM (who started his career supplying gravel for road construction) and many Cabinet ministers were well known to have interests in construction and road-building companies (Phongpaichit and Baker, 2000:36).

government contracts to build roads or provide other public utilities. ... Suwat, who maintains that he has had nothing to do with the family business since he joined politics, believes this is just a coincidence. 'Many building contractors become politicians, or some politicians are persuaded to go into the construction business,' he said. He admitted that these MPs have an advantage over 'un-political' companies because, as lawmakers, they usually have greater access to government agencies' budgets and the specifications for particular roads or projects. 'It makes it a lot easier for construction firms run by MPs to win government contracts because the politicians can use their personal connections with decision-makers in government agencies,' he said (*The Nation*, 27 October 1996).

After his successful re-election in 1996, Suwat was appointed once again to the Cabinet as Minister for Transport and Communications in a government which was again led by a former general based in the Northeast Region (PM Chavalit Yongchaiyut). Amid concerns of international investors and some business media over the economic policies that the government would follow amid growing signs of economic problems, the new PM held a press conference to introduce his new ministers and their credentials. One of the introductions was to Suwat Liptapanlop, who was re-instated as Minister of Transport and was announced by PM Chavalit, apparently oblivious to the concerns of investors about conflicts of interest, as suitable for the job based on the fact that his family owned and ran a successful construction firm.

The economic crisis that Thailand experienced in 1997-8 damaged many businesses in Thailand, but doesn't appear to have affected road-building interests of politicians. Prominent Thai academics were quoted in the press stating that government spending in fiscal year 2001 was overwhelmingly targeted to physical infrastructure construction and the military, while other areas were cut:

Pasuk Pongpaichitr, another Chulalongkorn economist, said spending for new road construction accounted for as much as 51% of total investment.

She said this was unnecessary given that existing infrastructure in many areas was sufficient for current needs.

Large spending on construction was rooted in the vested interests of some political parties which maintained financial connections with local infrastructure firms, Dr Pasuk said (*Bangkok Post*, 28 June 2000).

Notwithstanding the enduring influence of road builders in Thailand's government, most of the publicly funded road projects were relatively small and ad hoc. There was and continues to be no overall plan other than proposing building small projects which could be completed in the short time that governments were in power and benefits could be collected. Particularly popular have been "flyovers", or elevated roads over major intersections. Government agencies began building these structures to facilitate faster movement of motor vehicles (in addition to providing work for construction companies) in the 1970s. The funds for the flyovers were in some cases given by the governments of industrialised nations seeking to boost relationships with Thailand: hence, in central Bangkok two of the largest of these structures bear the names "Thai-Japanese Friendship Bridge" and "Thai-Belgian Friendship Bridge". By the late 1990s, in a publication marking its centenary, the Public Works Department of the BMA boasted of having built more flyovers than any other city in Asia (BMA, 1998).

Through the 1990s, King Bhumibol continued to initiate road projects at a number of scales, and many of these projects helped to "knit together" the larger road projects which were poorly connected. Thus, in the absence of government planning and coordination, the King filled some of these roles, often committing his own money. For example, a new 1.2 kilometre public road running parallel to the private Second Stage Expressway was initiated and built under the King's direction by military engineers at a cost of 26.7 million Baht, 15 million Baht of which was donated by the King (*Bangkok Post*, 24 February 1995). The 4 kilometre, 4 lane "Royal Initiative Elevated Boromraj Chonnanee Road Project" was initiated by the King in order to "increase capacity of traffic flow" on Bangkok's western side at a cost of 1.2 billion Baht. Following the completion of the latter elevated road, a massive new cable-stayed bridge (the most expensive bridge in Thailand at a cost of 4.6 billion Baht and largest of its kind in the world) crossing the Chao Phraya River was built and opened in 2002. The King has also

participated in proposing and planning a truck bypass road to the south of central Bangkok, and other outer ring road projects.

While extensive, the projects of the contractors' governments, the flyovers, and the royal projects together do not comprise a coordinated programme to build road hierarchies and networks. Unlike the methods of Urban Transport Planning, these projects involve piecemeal road expansion, much as it was done in the early years of motorisation in the USA, before large public road building began in the 1940s. In response, many proponents of motorisation, and particularly the World Bank and ADB, have argued that Bangkok is in need of a coordinated programme of road building. The rationale for this argument was frequently provided by areas of Bangkok such as Lat Phrao "superblock" (Figure 5.4). While the block is bounded by large public roads, the interior circulation is provided by a maze of privately-built and unconnected small roads accessing residential developments. Public buses can not penetrate the block (the upper map in Figure 5.4 indicates Bangkok's public bus route coverage), which can demand long travel times for the residents to reach the main, circumferential road. Many of these internal private streets (which lack sidewalks) are served by illegal motorcycles taxis (informally licensed and controlled by the police and military) which have stands at key junctions where the internal roads meet the circumferential road.

At the time of the 1991 coup, transport planning consultants prepared a transport planning strategy for NESDB's seventh national (five year) plan. One component of the strategy (which also emphasised rail mass transit and road pricing) was for a "distributor roads" programme to "open up superblocks" for development in order to "reduce urban sprawl" (Halcrow Fox and Associates, 1991:14). This recommendation was followed up in 1996 with a technical assistance grant financed by the ADB for the Public Works Department and the Ministry of Interior to carry out a *Distributor Road Study*. The study argued that a major cause of congestion in Bangkok is the "virtual absence" of secondary, distributor roads (Trans-Asia Engineering Associates et al, 1996:i). The study proposed a comprehensive network of primary and secondary road infrastructure as the basis



of an urban development strategy which would ensure that land development and roads were coordinated by a public authority. In spite of these plans and the willingness of the multi-lateral development banks to make loans for this purpose, a programme of coordinated, public road network building has yet to be initiated.<sup>31</sup>

### **5.5 The Second Stage Expressway project**

Just as the small and medium sized road projects were undertaken on an ad hoc basis, so too were a number of massive urban expressway projects. These projects were initiated and planned in the 1980s and 1990s. The first had been the ETA's First Stage Expressway which was a tolled road built with public funds using a loan from Japan. Before the first project was completed in the early 1980s, a number of other urban expressways were being planned by the ETA, which competed with the Department of Highways and Bangkok's Public Works Department to build high-capacity expressways, often in the same alignments and the same rights-of-way. This section analyses the turbulent history of the Second Stage Expressway (Figure 5.5), which faced two major problems and revealed much about expressway-building processes in Bangkok.

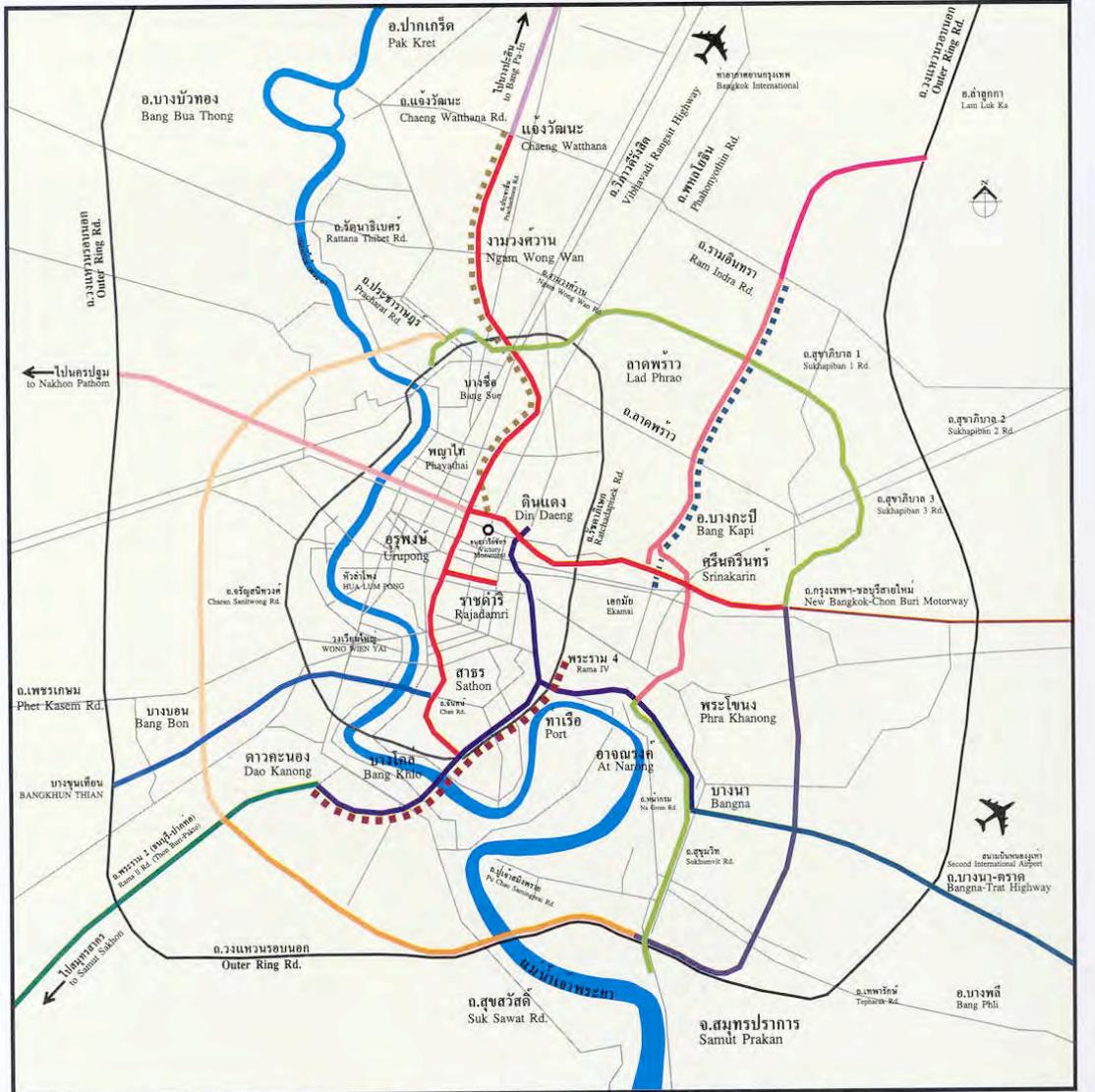
Between 1982 and 1984 JICA carried out feasibility studies for a second phase elevated expressway project and identified routes and a network. However, while finding the project feasible, the government would not commit to funding the large project. At this time there was a regional recession, and government began looking to the possibility of involving private investors, which was also in line with the ideas of the multi-lateral development banks. In 1985, while consultants working for NESDB were studying how projects and government spending should be phased in the short term, the Cabinet independently approved a central loop of

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<sup>31</sup> While the ADB and other agencies argued for expansion of public road networks, they have been argued against by motorisation critics. For example, Poboorn (1997) argues that regardless of whether networks are in place, there is a fundamental mismatch between Bangkok's high density and the space that would be required for a well-functioning road based system. Whatever the case, the point was largely academic, because no such programme was undertaken.

a Second Stage Expressway system to be developed as a project with private partners.

**Figure 5.5** ETA's planned and completed projects



โครงการระบบทางด่วนในกรุงเทพมหานคร เขตปริมณฑล และจังหวัดใกล้เคียง และโครงการระบบขนส่งมวลชนในพื้นที่ตามแนวเขตทางพิเศษ  
Expressway System Projects in Bangkok Metropolitan Area and neighbouring provinces and Mass Transit System Projects in the Expressway Right-Of-Way

- |   |  |   |
|---|--|---|
| <p><b>ระบบทางด่วน Expressway System</b></p> <ul style="list-style-type: none"> <li><span style="color: blue;">■</span> ระบบทางด่วนขั้นที่ 1<br/>First Stage Expressway System</li> <li><span style="color: red;">■</span> ระบบทางด่วนขั้นที่ 2<br/>Second Stage Expressway System</li> <li><span style="color: pink;">■</span> ระบบทางด่วนสายรามอินทรา-อออวงค์<br/>Ramindra-At Narong Expressway System</li> <li><span style="color: blue;">■</span> ทางด่วนสายบางนา-ชลบุรี (บางนา-บางพลี-บางปะกง)<br/>Bang Na-Chonburi Expressway (Bang Na-Bang Phli-Bang Pa Kong)</li> <li><span style="color: purple;">■</span> ทางด่วนสายบางปะอิน-ปากเกร็ด (แจ้งวัฒนะ-บางขุน-บางโพธิ์)<br/>Bang Pa In-Pak Kret Expressway (Chaeng Watthana-Bang Phun-Bang Sai)</li> <li><span style="color: green;">■</span> โครงการระบบทางด่วนขั้นที่ 3<br/>Third Stage Expressway System Project</li> <li><span style="color: teal;">■</span> โครงการทางด่วนสายดาวคะนอง-บางขุนเทียน-สมุทรสาคร<br/>Dao Kanong-Bang Khun Thian-Samut Sakhon Expressway Project</li> <li><span style="color: pink;">■</span> โครงการทางด่วนสายพญาไท-พุทธมณฑล-นครปฐม (วงแหวนโท-วงแหวนรอบนอก)<br/>Phayathai-Puttha Monthon-Nakhon Pathom Expressway Project (Phayathai-Outer Ring Road Section)</li> </ul> | <ul style="list-style-type: none"> <li><span style="color: purple;">■</span> โครงการทางด่วนสายศรีนครินทร์-บางนา-สมุทรปราการ<br/>Sri Nakarin-Bangna-Samut Prakan Expressway Project</li> <li><span style="color: orange;">■</span> โครงการระบบทางด่วนขั้นที่ 4<br/>Fourth Stage Expressway System Project (สมุทรปราการ-สุขสวัสดิ์-พระราม 2) (Samut Prakan-Suk Sawat-Rama II)</li> <li><span style="color: lightblue;">■</span> โครงการระบบทางด่วนขั้นที่ 5<br/>Fifth Stage Expressway System Project (สายพระราม 2-เพชรเกษม-นวมินทร์) (Rama II-Petchakasem-Nonthaburi)</li> <li><span style="color: pink;">■</span> โครงการทางด่วนสายรามอินทรา-วงแหวนรอบนอก<br/>Ramindra-Outer Ring Road Expressway Project</li> <li><span style="color: blue;">■</span> โครงการระบบทางด่วนขั้นที่ 6<br/>Sixth Stage Expressway System Project (สายถนนจันทร์-บางบอน-บางขุนเทียน) (Chan Road-Bang Bon-Bang Khun Thian)</li> </ul> | <p><b>ระบบขนส่งมวลชน Mass Transit System</b></p> <ul style="list-style-type: none"> <li><span style="color: brown;">■</span> โครงการระบบขนส่งมวลชนในพื้นที่ตามแนวเขตทางพิเศษ สายอนุสาวรีย์ชัยสมรภูมิ-บางซื่อ-แจ้งวัฒนะ<br/>Mass Transit System Project in the Expressway Right-Of-Way : Victory Monument-Bang Sue-Chaeng Watthana Route</li> <li><span style="color: blue;">■</span> โครงการระบบขนส่งมวลชนในพื้นที่ตามแนวเขตทางพิเศษ สายเอกมัย-รามอินทรา<br/>Mass Transit System Project in the Expressway Right-Of-Way : Ekamai-Ramindra Route</li> <li><span style="color: red;">■</span> โครงการระบบขนส่งมวลชนในพื้นที่ตามแนวเขตทางพิเศษ สายพระราม 4-ดาวคะนอง<br/>Mass Transit System Project in the Expressway Right-Of-Way : Rama IV-Dao Kanong Route</li> </ul> |
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Source: ETA (1997)

### 5.5.1 Baan Krua

In 1986, the ETA commissioned a Bangkok-based consulting company to carry out project feasibility studies, environmental impact assessment, and engineering design for the Second Stage Expressway. The Terms of Reference for these studies followed the expressway alignment identified in JICA's earlier studies. However, a 2.5 kilometre elevated "spur" linking a congested central city road to the expressway network was added to the project. The main beneficiary of this addition would have been a major office tower, hotel, and shopping complex (together called the World Trade Center) which had been initiated in 1983 by one of Thailand's most powerful and wealthiest Sino-Thai business families (Techapaibul) who had signed a 50 year lease to build the project on land owned by the Crown Property Bureau.<sup>32</sup> The addition was officially sanctioned in 1986 by the ETA board which approved a revised expressway plan including the spur, which was named the "collector-distributor" road.<sup>33</sup>

In spite of the ease with which this addition was approved by the Cabinet, the ETA, and NESDB, it would cause great problems for the project in the future. The problem arose because the project was designed to pass above a canal which was the home to one of Bangkok's oldest communities, Baan Krua. The community was comprised of Muslim Chams, originally from Cambodia, whose ancestors had been settled there in compensation for military service by King Rama I two hundred years earlier. The densely built, low-rise community was a very closely knit ethnic minority enclave in the predominantly Buddhist city, and was unwilling to move. In addition to displacing hundreds of households and destroying the community, the expressway would have destroyed a cemetery and a mosque.

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<sup>32</sup> The patriarch of the Tejjapaibul family, Udane Tejjapaibul, was also involved with another expressway project, the Don Muang Tollway to the airport, as he was the Chairman of the Board of Directors of the Don Muang Tollway Public Company.

<sup>33</sup> Naming the elevated expressway spur a "collector-distributor" road was an attempt to rationalise the project on the basis of Urban Transport Planning technical principles. Planners had long been arguing that Bangkok needed more collector-distributor roads to create road networks. However, collector-distributor roads are accepted internationally as smaller roads linking to main roads and creating networks: in contrast, the spur was clearly just another section of elevated expressway.

With a high level of determination and organisation, the community fought for 15 years against the project. In 1995, modifications were made so that the project would displace fewer families (230 compared to 870 in the initial proposal) (*The Nation*, 14 April 1995). However, the community expressed mistrust in the government and continued their opposition, and accused the ETA Governor of a “cosy relationship with the Techapaibul family” (Eckhardt, 1994:36). A Baan Krua community leader also suggested that Tarrin Nimmanhaeminda, Finance Minister in the mid-1990s, who was a major shareholder in the Siam Commercial Bank, of also holding shares in the expressway concessionaire and of initiating the project (*Bangkok Post*, 17 April 1995). Certainly, the project appeared to have been supported by powerful actors who were able to command agencies such as the ETA and NESDB to disregard public opinion against the expressway. These came not just from the threatened community, but also from newspaper editorials (e.g. *The Nation*, 14 April 1995) and from the first public hearings ever held in Thailand. And yet, many successive governments working with the ETA would regularly attempt to enter the community to begin expropriating and demolishing properties. Yet the community had the strength and leadership to continually forestall its eviction. Neutral public inquiries and newspaper editorials were favourable to the community in the mid 1990s, although the governments continued to push ahead with the project.

The odds appeared to be in favour of Baan Krua’s survival after a new constitution was drafted in 1997 during the economic crisis (and under the leadership of former PM Anand and a prominent NGO leader), enshrining the rights of communities to participate in deciding the fate of state projects. However, state agencies continued to push the project. Even the NESDB, generally regarded as one of the more technocratic agencies, less subject to the manipulation of business interests, in a summary of transport development for a UN meeting, declared that under the 1997 Constitution, opportunities have been increased for citizens “...to cooperate in decision making with infrastructure development projects” and emphasis has been placed on encouraging “...public participation in planning and managing the infrastructure projects to ensure

transparency and fairness” (NESDB, 2001:15-16). The same document then goes on to identify the expressway link which was rejected by three government hearings as a “national priority” that should be accelerated for completion and was budgeted (Baht 2.3 billion) and scheduled for completion by 2002 (Ibid).

However, in 2001 a new set of interests which worked against the project came to the fore and it appears that the project was shelved indefinitely. The demise of the project was related to a number of factors in addition to the community’s resistance. One was that the Techapaibul family’s business empire was decimated during the 1997-8 economic crisis. All three of the family’s banks which formed the foundation of their business empire, were taken over (two by Thai government agencies and one by ABN Amro) (Hewison, 2001). Subsequently, the family became embroiled in a dispute with the Crown Property Bureau over the uses of the World Trade Center shopping complex and the unfinished hotels and office towers which were to be accessed by the expressway spur. Also losing influence during the crisis was General Chavalit who was forced to step down as PM in 1997. The ETA which was responsible for expropriating the Baan Krua land had been under the control of Chavalit’s New Aspiration Party for many years.

Time will tell whether or not the community will survive in the future. In an ominous sign in 2002, the Crown Property Bureau leased a vacant property across the street from the Techapaibul’s World Trade Centre to French multinational Carrefour, which will build a “big box”, “cash and carry” retail outlet on the site. These types of businesses typically require major amounts of parking and automobile access, and the pressure to build the expressway link could arise again. Due to the lack of statutory plans, zoning, or other laws which could ensure the future of Baan Krua in its present location, they will be dependent on continuing to make alliances with politicians and remaining vigilant.

### **5.5.2 BECL and finance**

Early on, it had been decided that the Second Stage Expressway would be a privately built and operated project. Just as Baan Krua community leaders

petitioned PM Prem against their pending eviction in 1988, Japan's massive construction conglomerate Kumagai Gumi created a consortium, Bangkok Expressway Company Limited (BECL), which would build the second stage of the expressway system in return for a 30 year concession to collect tolls from users. The deal was signed between the ETA and BECL, whose shareholders in addition to Kumagai Gumi included military-linked Thai construction company Ch. Karnchang, five Thai banks, and the Asian Development Bank. The finance went smoothly until problems with land expropriation (including the Baan Krua lands) delayed the project. Nonetheless, by 1993 the project was almost finished.

At that point, a series of disputes over toll rates, division of revenue, and toll management broke into the open and a completed section of expressway remained closed. The Deputy PM, General Chavalit, who was the leader of the political party controlling the ETA, initiated legal actions against the BECL (Handley, 1993). While the PM, from another political party, was out of the country, Chavalit forced the expressway to open and charge lower toll rates than those in the original contract. As a result, the financial viability of the completed project was questionable, and the relationship between the ETA and BECL became acrimonious. Subsequently, the Japanese partners and the ADB sold their shares in the project to Thai private investors. Years later, it became public knowledge that many of the Thai investors included politicians who were directly involved with the project. After the change in ownership was complete, the toll rates were raised, and in 1998 the Interior Minister attempted to increase tolls again (*Bangkok Post*, 20 August 1998): in 2002 it was revealed that the Interior Minister's wife held 10,000 BECL shares which would increase in value along with the toll increase.

One of the largest BECL shareholders was Thaksin Shinawatra, a successful business tycoon who like many powerful people in Thailand in the 1990s moved between the worlds of politics and business. In a new style of election, in 2001 Thaksin became Prime Minister. To some PM Thaksin, a telecommunications tycoon, represents "...a logical extension of Thailand's business-dominated

‘money politics’, but also a dramatic change of scale. It superseded ‘money politics’ with ‘big money politics’” (Phongpaichit and Baker, 2002:11). Thaksin’s mix of politics and business extends into Bangkok’s urban transport. During Thaksin’s first foray into politics, he served as Deputy PM and as the head of a “Bangkok Traffic Solving Team” in 1995-6. During the same period, he was involved in a struggle for control over the ETA and expressway contracts (Pathmanand, 1998). He and his family at the same time held 39% of BECL shares (Ibid.). Under PM Thaksin, an apparent “purge” of ETA officials who had been in conflict with BECL took place in 2002: the ETA head and other officials were charged with corruption and the agency was banned from pursuing new projects.<sup>34</sup> This suggested that Baan Krua’s recent victory was related to BECL (under the influence of PM Thaksin) losing interest in building the missing expressway link and interest in pursuing state compensation. The ETA and the BECL in late 2002 were linked in a dispute over BECL demands for Baht 5 billion in compensation for not handing over the Baan Krua lands (*Bangkok Post*, 5 September 2002).

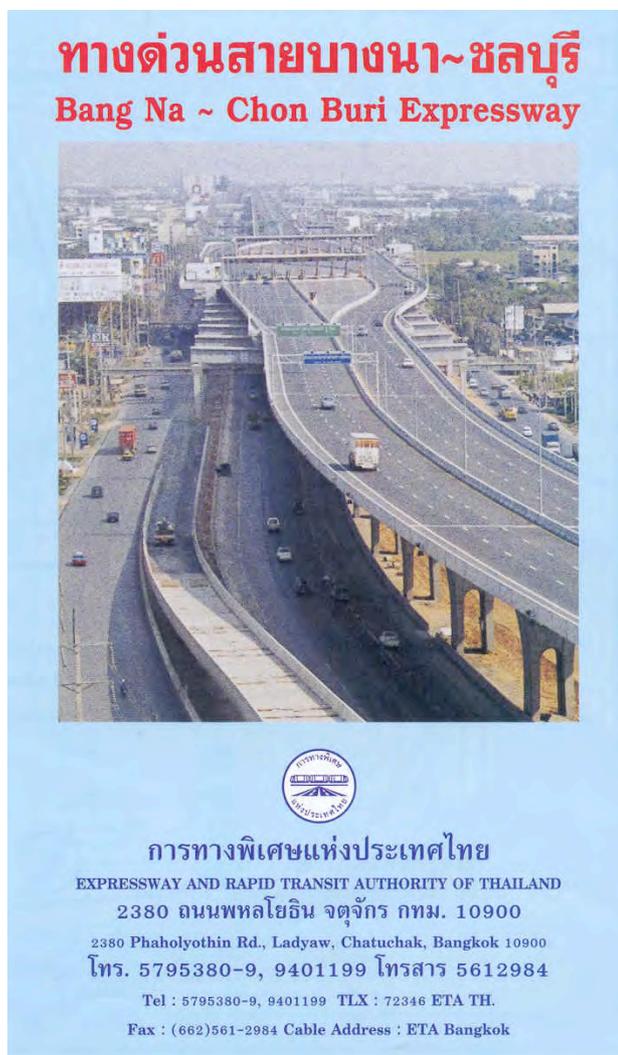
Between 1975, when the ETA began building the first stage expressway and 2000, approximately 440 kilometres of multi-lane, high capacity, high speed expressways and highways had been built predominantly for the accommodation of private motor vehicles. This figure includes the Japanese-funded regional highways built as part of the Eastern Seaboard development, including the eastern section of Bangkok’s outer ring road, which was built by the Department of Highways. While in and of itself large, what is particularly remarkable is that much of the capacity was built in the same corridors, and serving the same areas of Bangkok. Even when the economy was booming and motorisation increasing rapidly, demand for much of this tolled road space was weak; since 1997, many of the roads are sparsely used at most times. At the same time, traffic congestion

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<sup>34</sup> Officially, the corruption dispute is over another ETA project and involves vague charges that General Chavalit had changed the results of a study on the financial viability of the project in the 1990s. What was particularly interesting about this incident is that the news media named a number of politicians and politicians’ wives who owned BECL shares, although the PM’s ownership of shares was not discussed.

remains severe in many areas of the city where road area is low (including Lat Phrao superblock). For example, another ETA project (which became the source of controversy and a corruption probe in 2002), the Bangna-Chonburi expressway, paralleled the Japanese-funded Department of Highways road to the east of Bangkok (Plate 5.1). In order to see why such overcapacity was built in some corridors, it is imperative to examine processes by which land is developed in Bangkok.

**Plate 5.1 Bang Na-Chon Buri Expressway**



Source: ETA (2000)

## **5.6 Land ownership and real estate development**

In addition to providing benefits for contractors and concessionaires, Bangkok's road development is intimately linked to patterns and processes of changing land uses for financial gain. It also reflects a lack of land expropriation laws and the power of land holders (Pongsawat, 1995). Just as large transport infrastructure projects have been initiated, built, and operated by private companies without government constraints or regulation, the power to control Bangkok's land lies not in the hands of public agencies but with private companies and powerful individuals. Thus, large urban roads were built in corridors where little acquisition of private land was required and where significant rent capitalisation would accrue from properties adjacent to the road.

Prior to 1932, ordinary citizens were prohibited from owning land. But by the late 1960s, land speculation by wealthy Thai commoners had become a popular business undertaking, and most of the resulting developments and subdivisions were built in urban fringe areas without any government guidelines or control (Kirinpanu, 1992). This activity also coincided with the extensive development of road infrastructure under US tutelage and the decommissioning of electric streetcars: the final electric streetcar line was closed in 1968 (Nomura, 1996). By the mid-1990s, the share of royally-owned land declined to about 30% of the BMA's area, while land in private ownership by commoners has increased to about 60% of BMA land and government land accounted for about 10% (UNCHS, 1999). At the same time, private land ownership by private citizens became increasingly concentrated as larger landowners and real estate developers assembled larger holdings, particularly on the outskirts of the urbanised area.

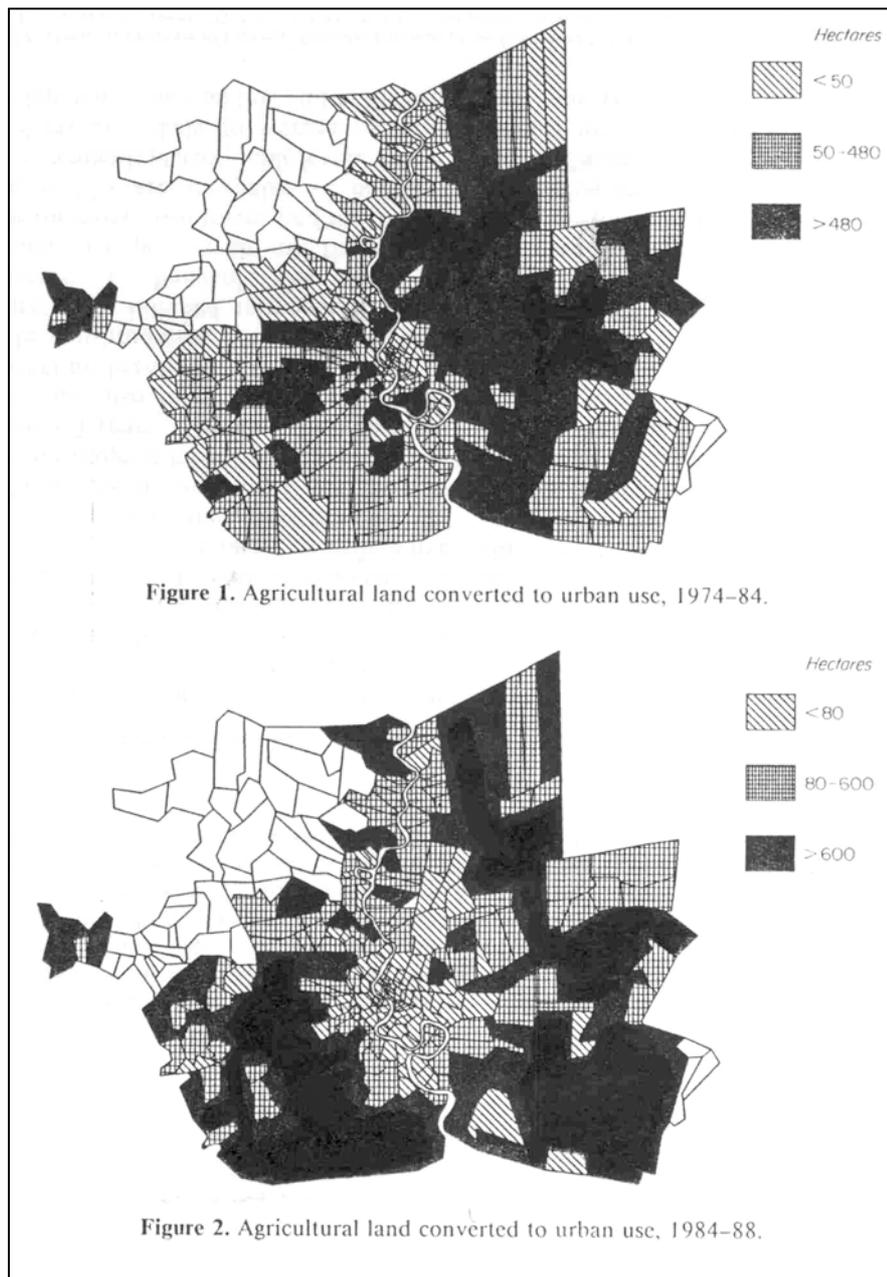
Massive property development in the 1990s was encouraged by some economic liberalisation measures initiated by the 1991 Anand government. The availability of "cheap money" for investment in real estate increased in 1992 when PM Anand approved a proposal to establish the Bangkok International Banking Facility (BIBF) as a means to promote Bangkok as a financial centre. The proposal was implemented in 1993 under the elected government of PM Chuan who succeeded

Anand, and resulted in Thai and foreign banks obtaining foreign currencies from offshore at relatively low interest rates. Much of the capital accessed by the commercial banks from the off-shore facility was then extended as credit to land developers in Bangkok. Between 1993 and 1996, commercial banks extended Baht 167.4 billion in credit to developers of housing, condominiums and other real estate (Yap and Kirinpanu, 2000:20). This massive influx of money into real estate development magnified some serious problems existing in Bangkok's pattern of land development and eventually led to regional economic crisis in 1997.

It also facilitated automobile-dependent sprawl, which was unconstrained by any form of public planning or land use control. Not only was public control lacking, but accurate property valuation based on market values and transactions was virtually non-existent. In addition, progressive property taxation, which would have required payment of higher taxes on higher value lands was absent. These problems were evident even before the BIBF was established and huge amounts of capital led to overvaluation of real estate. By 1991 "grave problems" were identified, related to the lack of land use planning controls and land dedication and acquisition powers (Dowall, 1992:34-5). In 1995 an independent real estate valuation company was appointed by the Government Housing Bank and it produced a report with the startling estimate that 15% of the entire housing stock in the Bangkok Metropolitan Region was vacant (Yap and Kirinpanu, 2000). Due to a lack of public valuation of real estate and a general lack of information, the major determinant of land and real estate value has been road accessibility.

This led to an increasing spiral of congestion and outward expansion into housing development at the fringe of the urbanised area where agricultural land was converted to urban use, outside the administrative boundary of the BMA (Dowall, 1992) (Figure 5.6). While planning by government agencies has been carried out since the first Bangkok Plan (Litchfield Whiting Bowne and Associates et al., 1960), comprehensive planning in Bangkok is a symbolic exercise that is restricted to mapping land uses that cannot be controlled because the power to

**Figure 5.6 Agricultural land converted to urban use, 1974-1988**



Source: Dowall (1992)

shape the city lies elsewhere in the society (Askew, 2002). Pornchokchai argues that the influence of groups benefiting from the lack of public regulation of land were able to hamper the enforcement of laws and land use plans (Pornchokchai, 2002). The private sector led the conversion of land to urban uses; however, public infrastructure and utilities were usually not in place and private housing

projects did not integrate with the public transport system. Thus, while windfall private gains were made, public facilities and coordination were lacking. The process, it has been argued, results from the massive influence of landowners:

If one has some land, one can do with it just about whatever one pleases, particularly if one also happens to be 'influential'. ... [N]o one seems prepared to take a stand against the land owners. Planning law is virtually non-existent, and the colored plans prepared by the enthusiastic but toothless Department of Town and Country Planning seem to be for wall decoration only. The provisions for controlling land use are so watered down as to be virtually ineffective, and anyone with sufficient clout can ride roughshod over them. The 'Bangkok Plan' [MIT/BMA, 1996] which was revealed with great fanfare two years ago falls short of providing the legal framework for structure planning, local planning and development control which would enable it to be implemented. ... In the absence of any controls, it is the roads authorities that have, by default, exercised the most influence on land use settlement patterns (Pike, 1998:57-8)

However, it was not only private land owners and real estate developers which were unconstrained by public planning and land use control. Public institutions including universities and government ministries also "leap-frogged" to Bangkok's suburban and peri-urban outskirts where they built new facilities. These developments necessitated long commutes primarily by automobile transport. Bus services are provided by the employer for low-paid administrative staff, while the lowest paid staff are frequently accommodated on the premises. The BMA, which had identified public transport and non-motorised transport as priorities, itself made plans to move to a more automobile-dependent location, which is also poorly accessible by public transport. This was in spite of many plans produced by various agencies for increasing public transport and achieving more orderly urban development with less sprawl. Askew argues that:

While there has been a proliferation of agencies to implement an ever-growing web of programs, including urban housing, transport and service provision, and above all planning, such agencies have lacked sufficient legal muscle to challenge the interests of private property holders and entrepreneurs bent on maximizing their profits and advantages. Such problems are structural and reflect existing conditions of power among elites and institutions ... (Askew, 1993:2).

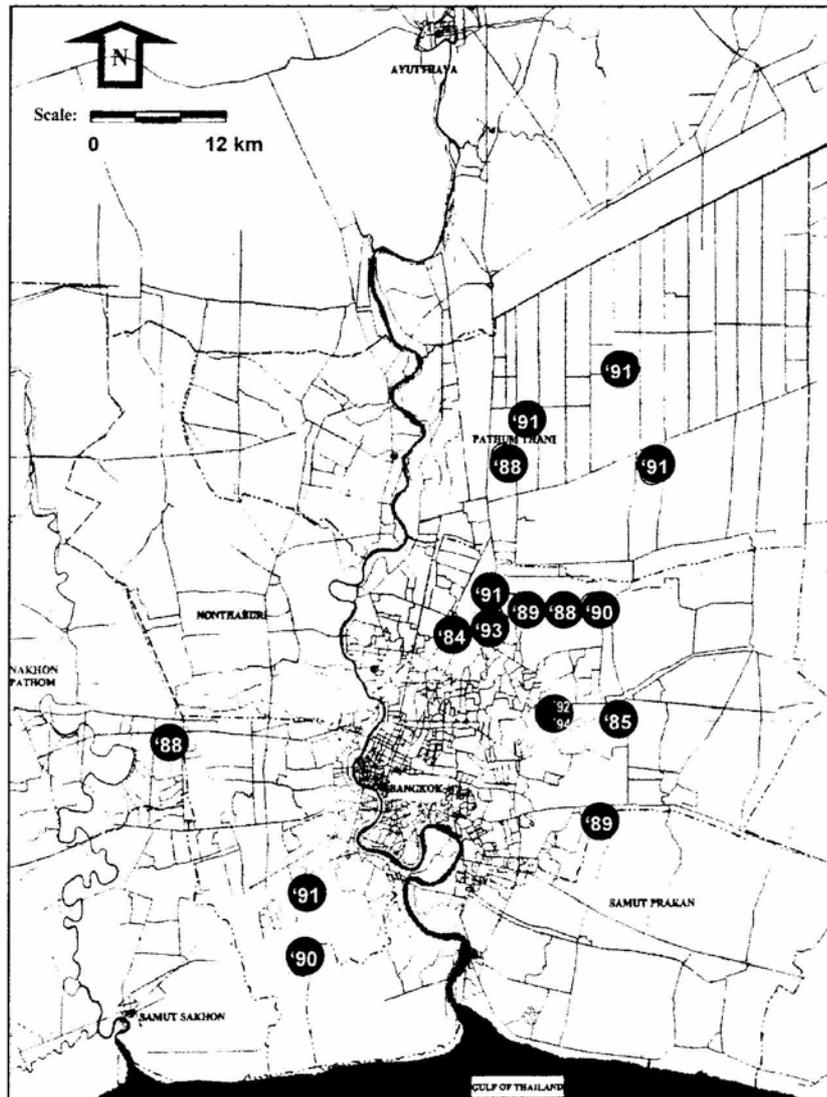


Also promoting motorisation and sprawl was the increase in market values of inner city land and a lack of affordable housing. In 1992, there were an estimated 230,000 urban poor living in approximately 1,700 slum areas, most of which were concentrated in the core areas of Bangkok where access to employment and other opportunities was available (Dowall, 1992). The view of the government and the Bangkok elite was generally that poor people and slums were problems. At the same time, a NESDB technocrat argued that "...urban poor are potential manpower that generates economic advantage which makes Bangkok a competitive production base. They should be encouraged .... (Kaothien, 1992:19). While permitted to stay temporarily on state and private lands, these households lacked secure tenure and when the owners of the land decided to make use of it they were evicted. Major sources of displacements were road and expressway projects, as well as real estate development. Major evictions were also carried out to clear a central city site for the construction of the Queen Sirikit Convention Center which was built to host a World Bank annual meeting.

Although exacerbated during Thailand's boom, housing affordability and security of tenure had been long-standing problems in Bangkok. One of Thailand's first democratic leaders, PM Kukrit Pramoj, was elected in 1975 on a promise of solving Bangkok's housing shortage. Just two years earlier, in 1973, the public National Housing Authority (NHA) had been created. However, a right-wing military regime which took power in a 1976 coup led to a de-emphasis on public housing. Beginning in 1984, the NHA began a programme of "slum relocation" projects which involved taking communities which were being displaced by transport infrastructure and real estate development projects, and moving them to new locations where the NHA could obtain cheap land (Figure 5.7). As land values skyrocketed in the central area, these locations were far from the central city and were poorly served by affordable public transport which was needed to transport people to work or school. There were numerous stories of poor individuals relocated to the fringe while maintaining jobs in the central area and sleeping and living in the place of their work and commuting "home" to the suburbs to join the family for a visit on a weekly or monthly basis. Nationally, the

NHA built about 200,000 housing units between 1973 and 1993 (National Housing Authority, 1994): in particular it was constrained because it did not have sufficient legal powers to obtain private and state land for public purposes and lacked government priority and budget.

**Figure 5.7 Sites of 25 “slum relocation” projects, 1984-1994**



Source: adapted from Viratkapan (2000)

Some private land developers such as Anant Kanjanapas, head of Bangkok Land Corporation, saw an opportunity to build affordable housing for private profit. The ups and downs of Bangkok Land paralleled Bangkok’s boom and bust. The firm’s roots dated to 1960, when Sino-Thai businessman Mongkol Kanjanapas

migrated from Thailand to Hong Kong and set up a successful watch-importing business. In the 1970s the Kanjanapas family began investing profits from the Hong Kong business into land around the periphery of Bangkok. In the real estate boom of the late 1980s and early 1990s they became the most aggressive private land developers in Bangkok, and the wealthiest family in Thailand at that time (Phongpaichit and Baker, 1995). Their largest real estate development project, Muang Thong Thani, was claimed by CEO Anant to be the largest private real estate project in the world (Fairclough, 1995). The idea for Muang Thong Thani came to Anant while driving by Sha Tin new town in Hong Kong (Ibid.). The concept was similar in form: a new town comprising high rise towers in a green field location. However, in many ways Muang Thong Thani differed from its inspiration in Hong Kong. In Hong Kong, most housing is publicly provided through an active land policy based on public ownership of land, commitment of substantial public funds as a result of political priorities, and managerial efficiency resulting from bureaucratic autonomy to manage the process (Castells et al, 1990). High quality road and rail links to the CBD are provided as part of substantial public expenditures made in response to demands and processes from the local society.

In contrast, Muang Thong Thani was a private development located far from the built up area with no organised public programme for infrastructure and amenity provision. Bangkok Land attempted to address these shortcomings by fostering close relationships with Cabinet ministers in order to encourage them to provide transport infrastructure. Most notably, they were successful at having an extension of the Second Stage Expressway built (elevated over vacant land in some sections) to pass through the lands. They were also successful in having the government build a stadium at the Muang Thong Thani site for the 1998 Asian Games, which were awarded to Bangkok in 1990. A competition had been held to determine the location of a stadium for the games and it was decided to build on public land at Thammasat University on the northern outskirts of Bangkok. The winning contractor was Christiana & Nielson (Thai), owned by the Crown Property Bureau. However, after this decision was made, the government decided

to finance the construction of another stadium at the Muang Thong Thani site, next to the private new town development. However, the development continued to have problems because there was insufficient demand for the office space and affordable condominiums it was building (Fairclough, 1995). Shortly before the Asian economic crisis began with the devaluation of the Thai Baht on 2 July 1997, the *Washington Post* newspaper reported on the state of Muang Thong Thani as symptomatic of the problems facing Thailand's economy. As the crisis hit in 1997, Anant Kanjanapas offered Muang Thong Thani as a site for a new parliament and took the Cabinet to the site for an inspection. This attempt to salvage the project was unsuccessful. However, in 2000 the Government Savings Bank restructured Bangkok Land's debts (including Baht 800 million owed on loans used to build the Asian Games stadium) (*Bangkok Post*, 7 March 2000). It has also created a convention center which has hosted government and private trade fairs and other events, and advertises 10,249 parking spaces as one of its amenities (Figure 5.8). Nonetheless, most of the partially built Muang Thong Thani stands empty as a monument to the problems in Bangkok's real estate sector. The 1997-8 economic crisis in Thailand has been intimately linked to processes of private property development in Bangkok (Yap and Sakchai, 2000). One immediate remedial response of the World Bank in Thailand was to increase expertise and capacity in urban property valuation and increase the amount of financial information, which had previously been lacking.

**Figure 5.8 Location of Muang Thong Thani**



Source: [www.impact.co.th](http://www.impact.co.th) accessed 1 August 2002

### **5.7 Encouraging cars and confronting a traffic crisis**

Another way that PM Anand's interim administration in the early 1990s impacted upon urban transport, was to make cars much more affordable. Land development was sprawling and motorisation and road capacity increased largely at the expense of the quality of bus public transport systems and non-motorised transport. The patronage on the public bus system declined by over 30% between 1995 and 2000 (Sayeg, 2002). Cars became more necessary, particularly to a growing middle class whose incomes were rising, just as the quality of public bus services declined. In 1992 as part of larger structural adjustment measures to liberalise Thailand's economy, PM Anand lowered duties on cars, which suddenly became affordable to a greater range of people. In addition to lowering the selling prices of cars, the BIBF led to the creation of finance companies. In addition to these

companies' real estate lending, they also lent money to consumers (who would not have qualified for bank loans) in order to purchase cars and motorcycles.

In the 1980s and early 1990s the scale, magnitude, and worldwide notoriety of Bangkok's traffic congestion and air pollution increased rapidly, alongside growth in motor vehicles. By the early 1990s congestion of motor vehicles on Bangkok's roads had become both "deeper" and "wider" and for the first time, traffic congestion during the weekend became regular (Daniere, 1995). Air pollution problems worsened and covered a much greater area and due to growth in population and area, a much larger number of people were suffering. A study found high concentrations of certain air pollutants with serious health implications and that the conditions were continuing to deteriorate (Boonthearawara et al, 1994). Ironically, Anand identified himself as a campaigner for clean air, although his preferred prescriptions were for technological and regulatory "free-market" solutions which would not reduce the number of motor vehicles or involve putting more resources into public or non-motorised transport. In 1994, Anand convened a seminar on the "Traffic Crisis": the first "domestic" attempt to work out technical and collective solutions to Bangkok's transport problems.

In addition to their ownership and use by working and middle class households, motorcycles (many of them with highly polluting two stroke engines) also came to be used as taxis serving large areas of the city unserved by public buses. A dynamic paratransit sector and many illegal operators operating within it, "...stepped in to provide some of the diversity and carrying-capacity efficiencies that the road network lacks" (Cervero, 2000:87). While celebrated by some as indigenous innovation and small-scale capitalism, they also contributed greatly to noise, air pollution, and traffic fatalities. While not providing public facilities, public officials collected informal payments to allow "illegal", non-registered motorcycles and minibuses to serve these areas. At the entrances to lanes, technically illegal or unsanctioned motorcycle taxi stands utilise sidewalks and road space which are rented out by local police and military officials. While competitive and low-cost (in terms of operations, but not in terms of social costs

brought about through high accident rates, pollution, and low wages/long hours for relatively non-productive work), rents generated filtered up to high-level public and private individuals (Cervero, 2000). Every Bangkok Governor has pledged to restrain the production or use of the two stroke motorcycles, but none have been able to convince Cabinet ministers to take actions.

### **5.8 Rail mass transit projects**

An alternative to private cars and motorcycles and expressway-building was rail mass transit. But in contrast to the extensive trunk, high speed road network, by 2002 only 24 kilometres of urban rail mass transit were in operation. Rail had been recommended in virtually every plan for Bangkok since the early 1970s, had been endorsed by the Cabinet in 1975, and could have addressed many of Bangkok's transport, land use, and environmental problems. This section examines some of the events surrounding the convoluted history of urban rail projects in Bangkok.

The initial difficulty can be traced back to the Cabinet's 1975 decision of rail over busway-based mass transit. While making the commitment in principle to building rail, the Cabinet did not provide a budget sufficient to proceed with the proposed project, opting instead to fund the First Stage Expressway project and many smaller road building projects. Some in the government suggested that private finance of rail could be an alternative to public expenditure.

By the 1980s, proposals from private companies to finance and build rail systems on a private business basis began to emerge. Two consortia, Asia-Europe and Lavalin/Mitsubishi, produced competitive proposals for elevated rail systems running along alignments similar to those suggested in the *Bangkok Transportation Study* (1975) and follow up plans for mass transit systems. While under the overall jurisdiction of the ETA, each proposal became affiliated with a certain set of politicians or patrons which would steer it through. Eventually, in 1987, the ETA awarded a Canadian-led Lavalin/Mitsubishi consortium a contract to build a "SkyTrain", a relatively new automated technology for large light rail

vehicles on an elevated track. In mid-1989, Canada's Export Development Corporation offered Thailand's government an \$800 million (CAD) loan which would cover the project's Canadian content. Additionally, the Export-Import Bank of Japan offered about Baht 7.6 billion. Thirty nine percent of the Canadian loan was to be interest-free, with the rest to carry a minimum interest rate of about eight percent. However, negotiations bogged down when the Canadian soft-loan agency required some form of loan guarantee from Thailand's government. Just as the government had balked at committing government money while endorsing the concept of rail in 1975, twelve years later similar trepidation emerged. Eventually, the final contract proposal from Canada was rejected in 1989 by the Chatchai Cabinet, and a new set of negotiations began between the ETA and a new consortium, the Asia-Euro Consortium, led by Leighton Contractors of Australia, which had been the previous runner up.

Meanwhile, another rail project was initiated in the late 1980s by the first elected governor of the BMA, Chamlong Srimuang. This initiative was to eventually lead to the 24 kilometre Bangkok Transit System elevated heavy rail system which began operations in late 1999. The basic idea was that the BMA would award a concession agreement to a private company to build and operate mass rapid transit infrastructure and after the concession period of 30 years, the infrastructure and its operations would be turned over to the BMA. This Build-Operate-Transfer (BOT) concept was crucial, as the BMA is dependent on the central government's Ministry of Interior for funds, with very little ability to raise revenues independently.<sup>35</sup> And because the project would run down the centre of city streets under the jurisdiction of the BMA, the agreement provided for the development of mass transit infrastructure with a very minimal commitment of public resources, which appeared to have been the principal barrier in the past.

Soon after Chamlong's mass transit project for the BMA was initiated, another project to be developed by the private sector was let by the State Railway of

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<sup>35</sup> The BMA spends less than 10% of the total expenditures on city-building within its territory (Webster, 2000).

Thailand under the Ministry of Transport and Communications. The roots of the idea for this project can be found in Bangkok's first city plan, which recommended that at-grade railway crossings for the inter-city trains be raised in order to increase speeds for road traffic (Litchfield et al, 1960). There had also been proposals for these grade separation measures to be made in order to create commuter rail services between Bangkok's suburbs and the central station. While the plan had gone unimplemented for almost 30 years (in spite of encouragement from King Bhumibol), in 1989 the SRT revived the proposal along with the idea of having a private company carry out the work in exchange for some land plots from the extensive land bank of the SRT. According to the SRT, they drew up a short one page Terms of Reference for the project, which was bid on by only one company, which then proposed a mega-project multi-level rail (both commuter using existing trains and a new urban system) and highway project which would allow for land developments along the right-of-way. However, according to Gordon Wu, the business tycoon and head of Hong Kong-based Hopewell Holdings which responded with a proposal for a mega-project, the project was initiated by him:

He said that one day, in 1989, he came to Thailand to discuss a power station project. He found himself and five of his engineers stuck in a two-hour traffic jam on the way in from the airport. Three of the engineers suggested they turn round and fly back home.

Mr Wu said they pointed out to them that there was a problem, and that perhaps Hopewell could contribute to the solution. He did not go on to describe the controversy over the way the contract was concluded.

"So we found ourselves on the receiving end of a \$3.2 billion mass transit contract," he said (Bangkok Post, 9 December 1994).

The project proceeded quickly, without technical or feasibility study of the proposal, and it was alleged in the news media that the Transport and Communications Minister, Montree Pongpanit, obtained a large sum of money for his part in facilitating the project. The Cabinet, with the encouragement of the Minister, approved the mega-project without technical analysis or study. When the technocrat heading the NESDB voiced objections and suggested that the proposal required study, he reportedly was told by the Minister that the project

should not be delayed as “a foreign investor will be bringing us money” (*Bangkok Post*, 1997).

As the potential for personal financial gains from privatised rail projects became apparent, political battles broke out over the control of the projects. In particular, competition surfaced between the Ministry of Interior which controlled the ETA and BMA and which was controlled by the Chart Thai party, and the Ministry of Transport which controlled the SRT and which was controlled by the New Aspiration Party. Each party lobbied and battled against the plans of their rivals (Handley, 1990).

This activity was temporarily brought to a halt by the 1991 coup against the Chatchai administration, and the director of the ETA was arrested by the military generals on the grounds of corruption, although the particular charges weren't specified. The military junta immediately announced that all large-scale capital projects approved by the previous government would be reviewed. The ETA's elevated rail project was subjected to close scrutiny and eventually suspended.

As part of the “clean up” effort to re-organise the many projects which had been initiated by the Chatchai government, the post-coup government of Anand Panyacharun in 1992 passed a “Royal Act on Private Participation in State Affairs (B.E. 2535)” which attempted to provide some public framework for concession agreements in the wake of conflicting infrastructure and other privatised agreements. The act makes it clear that greater scrutiny is required. Similarly, in 1993 the Secretary-General of the NESDB drafted guidelines for reviewing private sector infrastructure projects. The Act and the guidelines are difficult to understand, at least in the available English-language translation, but appear to be intended to increase the period of time and the level of study that any private proposal would be subject to, but still do not provide clear guidelines by which a project would be accepted or rejected.

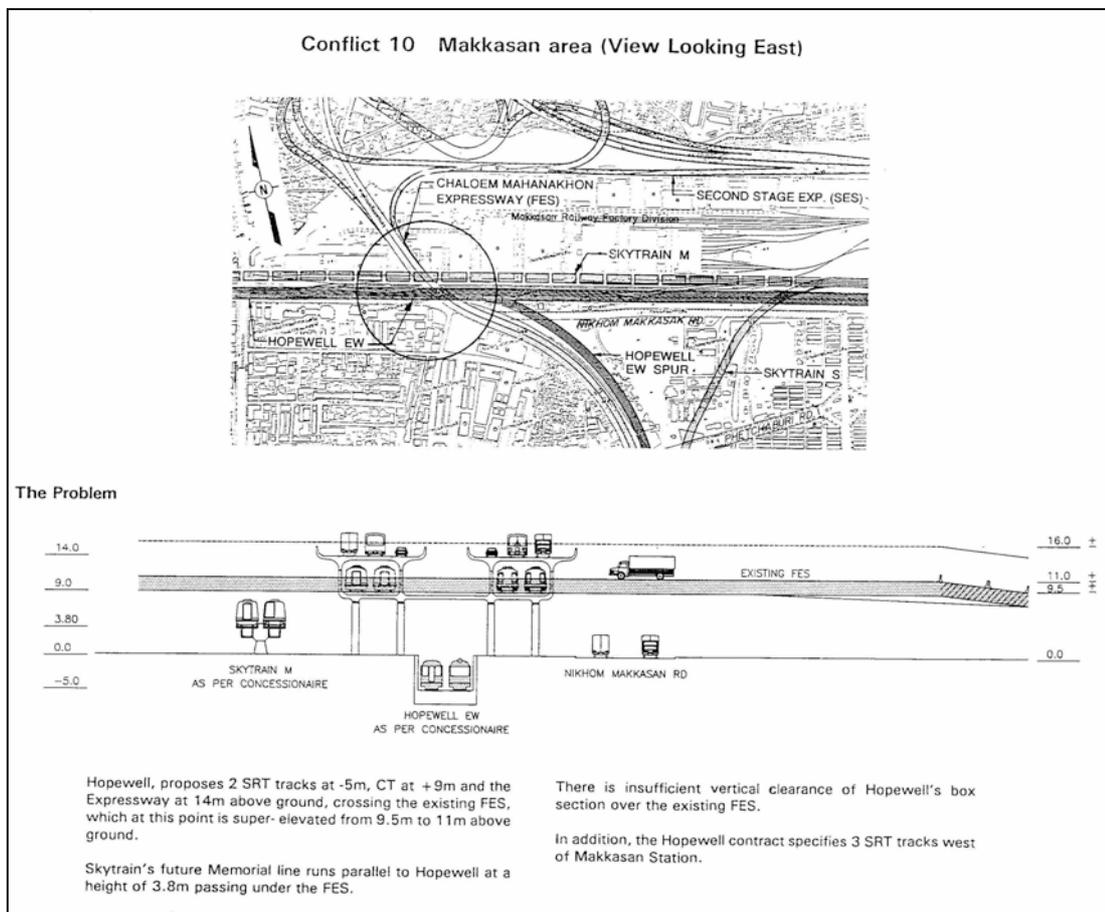
Also at this time, the NESDB hired consultants in an attempt to rationalise and coordinate the large number of rail (and expressway) projects which had been initiated and were in various stages of progress. Some of these coordination problems were at a contractual level. For instance, the Hopewell/SRT rail and expressway project paralleled the Don Muang elevated tollway project, which had been designed and awarded based on a contract stating that no parallel road capacity was to be built. Other conflicts between projects were physical. Subsequently, *Advisory Consulting Services for the Coordination of Expressway and Mass Rapid Transit Megaprojects in Bangkok* (Wilbur Smith Associates, 1991) sought to devise ways of solving physical conflicts between systems and to investigate whether there may be inefficient duplication of services (Figure 5.9). Attempts at rationalisation were also undertaken by studies paid for by the governments of Canada, Germany, and Japan, all of which were attempting to secure the participation of their companies in building Bangkok's proposed rail systems.

Amid the continued inability of the ETA to advance a rail mass transit project, in mid-1992 the Anand caretaker government established a new agency, the Metropolitan Rapid Transit Authority (MRTA), to take over the "Skytrain" project. At the time the new agency was created, there was debate about which ministry the new agency should be placed under. The move to take the project away from the ETA was seen to be an attempt to wrest control of the project from one political party and give it to another. When it was suggested that the MRTA be placed under the Ministry of Transport and Communications, the former head of the NESDB openly opposed the move. The basis given was that Montri Ponpanich, who as Minister of Transport, had initiated the Don Muang Tollway and Hopewell/ SRT projects, could once again take control of the Ministry of Transport (*Bangkok Post*, 15 April 1995).

Once the MRTA was placed under the control of the Office of the Prime Minister, it was decided that rather than relying solely on a private concession, the government would play a greater role in the development of the "Skytrain"

project. A prominent British transport engineer was brought in to make recommendations on how to proceed with the new elevated project, as well as how to coordinate this with the other systems underway (Ridley, 1992).<sup>36</sup> In 1993, the MRTA awarded a concession to Bangkok Land to develop the project. Bangkok Land wanted to use the MRTA train project as a platform for mixed use land development on a 150 acre site and in 1993 unveiled a “Grand Station” plan (Bangkok Land, 1993).

**Figure 5.9 Physical conflicts between transport mega-projects**



Source: Wilbur Smith Associates (1991:III-54)

<sup>36</sup> Similarly, in 1994 a “master plan” for mass rapid transit systems was produced by consultants for the OCMLT, years after the decisions and routes had been decided.

While the ETA project was being transferred to the new MRTA, the Hopewell/SRT and BMA projects continued to progress. After re-election in 1992, BMA Governor Chamlong continued to pursue plans to build mass transit to Silom Road, the central business area, and a subway, which was studied by a Soviet team commissioned by the BMA. Late in his second term as governor of the BMA, the details of Chamlong's project became clearer. After serving a second four year term, during which the Bangkok Transit System began to take shape in the 1990s, governor Chamlong's chosen successor, a former deputy governor for public works and professionally trained architect was elected. Through Governor Krisda, Chamlong continued to play a role in the BMA and to provide continuity of administration (McCargo, 1997). In addition, a former deputy governor of the BMA became director of the Bangkok Transit System Corporation (BTSC), the company which had won the concession to build the project. The BTSC was a subsidiary of Tanayong, a land development project owned by Keree Kanjanapas, the brother of Anant Kanjanapas, who was the head of Bangkok Land, which held the contract for the MRTA elevated train.

By mid-1994 construction on both the BTS and Hopewell systems was underway, but both were facing challenges. Until this point, the progress of the BTS project had been facilitated by the fact that it did not require substantial government expenditure and hence there was little political interference. Nonetheless, there were some problems surrounding the site of the depot, which was originally proposed for land abutting a central Bangkok park. After angry protests against the former BMA governor who had initiated the project, in 1993 the depot site was eventually moved (McCargo, 1997).

However, a more serious problem continued to face the BTSC, which had still not arranged finance to pay for the massive capital expenditure. Preliminary commitments had been made in principle from the International Finance Corporation, the private sector arm of the World Bank, and from Kreditanstalt für Wiederaufbau (KfW), a German state-owned development bank, which would offer a loan (KfW eventually provided 70% of the capital) and the operating

system (rolling stock, electrical and mechanical work), on the unwritten agreement that the principal foreign partner would be German conglomerate Siemens. However, the international lenders wanted some local financial commitment in Bangkok as a demonstration of confidence in the project (Mansfield, 1996). This had become particularly imperative because the project was going to be the largest privately financed project in Thailand's history, and international investors remained nervous following the debacle surrounding the "nationalisation" of the Second Stage Expressway. Getting Thailand's domestic banks to join the project was not easy. In the initial stages of the project, Bangkok Bank, the largest domestic bank, owned by the Sophonpanich family, served as financial advisor for the domestic point of the fund raising. However, the Bangkok Bank remained non-committal and after demanding that BTSC raise more equity to qualify for a loan, in 1994 the BTSC replaced Bangkok Bank with Siam Commercial Bank as the lead arranger of local finance.

In the wake of this move to address problems of finance for the BTS elevated train project, a new set of challenges emerged as a coalition opposed to the project became active. The coalition was led by Khunying Chodchoy Sophonpanich, daughter of the founder of the Bangkok Bank, and her opposition to the project was based on the belief that the elevated train would have negative aesthetic and local environmental impacts on central Bangkok. This was not Khunying Chodchoy's first foray into environmental activism. In 1983, she formed an NGO, the Thai Environmental and Community Development Association, by inviting corporations including Caltex Oil, Shell, Siam Cement, and Siam Motors which "shared the same ideals" to "join together" (the corporations provided money while Bangkok Bank provided office space in its Silom headquarters) in a publicity campaign to discourage littering (*The Nation*, 1985). The campaign called "Magic Eyes" targeted school children with the message that individuals cause pollution "by indiscriminate littering" (*The Nation*, 1985). The campaign was, and continues to be, popular (at least among Thailand's enthusiastic elite) and has been extolled nationally and internationally as the type of positive contribution that civil society can make to the environment. In 1987, the United

Nations Environment Programme (UNEP) awarded Khunying Chodchoy official recognition “for her outstanding work in helping to protect and improve the environment” (*The Nation*, 1987). While there was respect for her activities, there was also some suspicion that her campaign, which was being run from the Bangkok Bank’s headquarters, had more to do with a conflict over financing the project than with the environment.

Nonetheless, Chodchoy’s protest was strengthened by the formation of an anti-BTS coalition which included the police and the National Environment Board. The official basis of the police protest was that the elevated structure junction passed next to the Police Hospital. The police were supported in parliament by a Police Captain who was an elected politician and secretary general of a political party (which was acting as patron to other transport mega-projects). The “problems with the BTS construction” were used as ammunition for the Opposition to attack the Government in mid-1994 just as the BTS construction began. The police captain attacked the project on the basis that the contract between the BMA and the BTSC put Thailand’s national interest at a “great disadvantage.” The main force of the criticisms was that the company was given too many benefits and concessions by the BMA and that there were improper links between the BMA and the BTSC. It was insinuated that corruption (presumably bribery) had played a role in facilitating the project.

It is not entirely clear why the National Environment Board opposed the project, although an official challenge was launched based on administrative details over the submission of an environmental impact assessment. Later, the protest was joined by the Mater Dei school, an exclusive all-girls school attended by a large percentage of students who are dropped off in chauffeur-driven luxury automobiles. Their protest was on the basis that the station would trap air pollution next to the school and would attract criminals and other undesirable people.

In response to the anti-BTS coalition led by Khunying Chodchoy, in May 1994 the Cabinet decided that all rail mass transit projects within a 20 square kilometre area of the central city should be placed underground. However, three weeks later the two projects under construction, the BTS and Hopewell/SRT projects, were exempted from the decision. The MRTA project (formerly under the ETA), and at this point a concession to Bangkok Land, however, was going to be forced partly underground by this decision. The government offered cash compensation, but it was clearly not enough to cover the additional costs and Bangkok Land contested the decision and eventually the agreement between the MRTA and Bangkok Land was scrapped. While the decision that new rail systems in the inner urban area should be underground increased the costs and complexity of the project, it also led to a soft loan from the Japanese government, which by the mid-1990s was the only foreign government still giving soft loans to Thailand, by then a “middle income” nation. Japan was also eager to utilise new tunnelling technology, and the MRTA project offered opportunities for Japanese companies.

In 1996 finance of the BTS was finally arranged. The British Project Director expressed surprise that the civil engineering contractor had carried out almost 30% of the work over a three year period prior to this without an “Instruction to Commence” and remarked that he found it “...difficult to imagine this happening in any other country” (Mansfield, 1996). While the problems facing the BTS were being solved, the Hopewell/SRT project was facing new challenges. While construction was underway, many basic engineering plans for the system had not been worked out. In addition, the plan relied on the prospects for developing land along the route, but by 1996 concerns about Bangkok’s over-inflated property market had surfaced and land values were falling. As the economic crisis began in 1997 and foreign investment poured out of Thailand, the project was abandoned, and has yet to be revived in spite of interest by various government agencies. Hundreds of large concreted brace-like structures over two sections of SRT tracks have proved to be a source of concern for the government, which is aware that these are a visible reminder of fundamental political problems in Thailand. In 2000, two competing plans for reviving the scaled back version of the project

were drawn up by consultants (one for the SRT and another for the OCMLT). However, the Cabinet was again unwilling and unable to commit the large amount of public funds to the project.

By this time the MRTA subway project was well underway. The first Japanese government loan for the MRTA subway had been disbursed beginning in 1996. In conjunction with this loan, JICA experts were dispatched by the Japanese government to give advice to the MRTA on construction and operation of the project. The tunnelling work was carried out by a consortium of Mitsubishi of Japan and Alstom of France, working together with Thailand's largest construction companies Ital-Thai and Ch. Karnchang.

However, during the 1997-8 economic crisis, the Cabinet and NESDB once again balked at the public expenditure on a rail project, and in 1998, the NESDB recommended postponement of the project. In response, the government of Japan re-classified the loan and lowered the interest rate on the borrowed money from 2.5% to 0.5% and further extended the payback time to 40 years.<sup>37</sup> In 1999, contracts were let to two consortiums to carry out the civil engineering works for the subway: Japanese and German companies formed a joint venture with Thailand's Ch. Karnchang for one line, and Japanese companies formed a joint venture with Thailand's Ital-Thai Development for the other line. The rolling stock and operating concession were awarded to a consortium led by Ch. Karnchang, which subsequently awarded the contract to build the trains to Siemens of Germany. While the loan for the MRTA subway is very large, it remains smaller than the total Japanese urban transport lending over a thirty year period in Bangkok, most of which went to roads (Table 5.1). Notwithstanding delays, the first 10 km of the Mass Rapid Transit Authority (MRTA) subway, or "Blue Line," is scheduled to begin operations in 2004, followed by an additional 10 km in 2005.

**Table 5.1 OECF/JBIC lending for urban transport in Bangkok**

Projects	Years	Total amount (million yen)	Executing agency
MRTA subway	1996-2000	192,634	Metropolitan Rapid Transit Authority
Road bridge design, engineering, construction and rehabilitation (incl. connecting roads)	'71, '74, '77, '80, '81, '83, '87, '93, '95, '96, '97,	54,759	Public Works Department
Elevated and at-grade toll expressways and highways, ring roads	'78, '79, '82, '83, '88, '90, 91, '93, '95, '96, '97	204,296	Expressway and Rapid Transit Authority of Thailand, Department of Highways
"Railway commuter traffic reinforcement project"	1982	9,330	State Railway of Thailand
"Traffic Planning and Management"	1998	4,148	Office of the Commission for the Management of Land Traffic

Source: JBIC (2002)

In late 1999, twenty five years after the first formal plan for rail mass transit was endorsed by Thailand's national cabinet, the 24 kilometre BTS elevated heavy rail system began operations. During its first year of operations, the BTS carried an estimated average of 180,000 persons per day over 24 km of track, well below the projections of between 450,000 and 600,000 per day which were based on optimistic scenarios that included the re-organisation of buses. Due to the difficulty in passengers reaching stations, the BTS began operating its own free feeder buses. After two years of revenue service, BTS ridership was increasing very slowly and had reached an average of approximately 220,000 riders per day, which is much lower than forecast. By 2003 it had reached 280,000 per day and the World Bank's IFC found that the BTS had delivered substantial external benefits, in spite of lower than forecast ridership (Sayeg, 2002).

In addition to public benefits, private landowners and business located along the BTS route have received substantial benefits. In spite of protests during BTS planning and construction that the train would have a negative impact on their

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<sup>37</sup> Apparently, there was still consternation in the Thai government at this point and representatives of the Japanese government and construction companies then took to personal lobbying of government officials.

property values, the opposite occurred. Notwithstanding the economic recession when the BTS began revenue service, demand for retail space near BTS station was reported to have increased just months after opening (*The Nation*, 19 May 2000). Some owners of large shopping complexes paid for connections between the elevated station concourses and their buildings. However, because of the lack of property valuation and taxation, these private benefits will not be captured for public purposes.

At the same time, the BTSC, as the owner-operator of the only fully private rail mass transit system in the world, is struggling to make payments on its massive debt. While earning enough from fares and retail activity to cover operating expenses, it is crippled by large interest payments. Ridership and profitability would be greatly boosted by extensions to the system, and the Cabinet approved small extensions in three directions, while the BMA Governor elected in 2000 proposed even more ambitious extensions (Sundaravej, 2000).

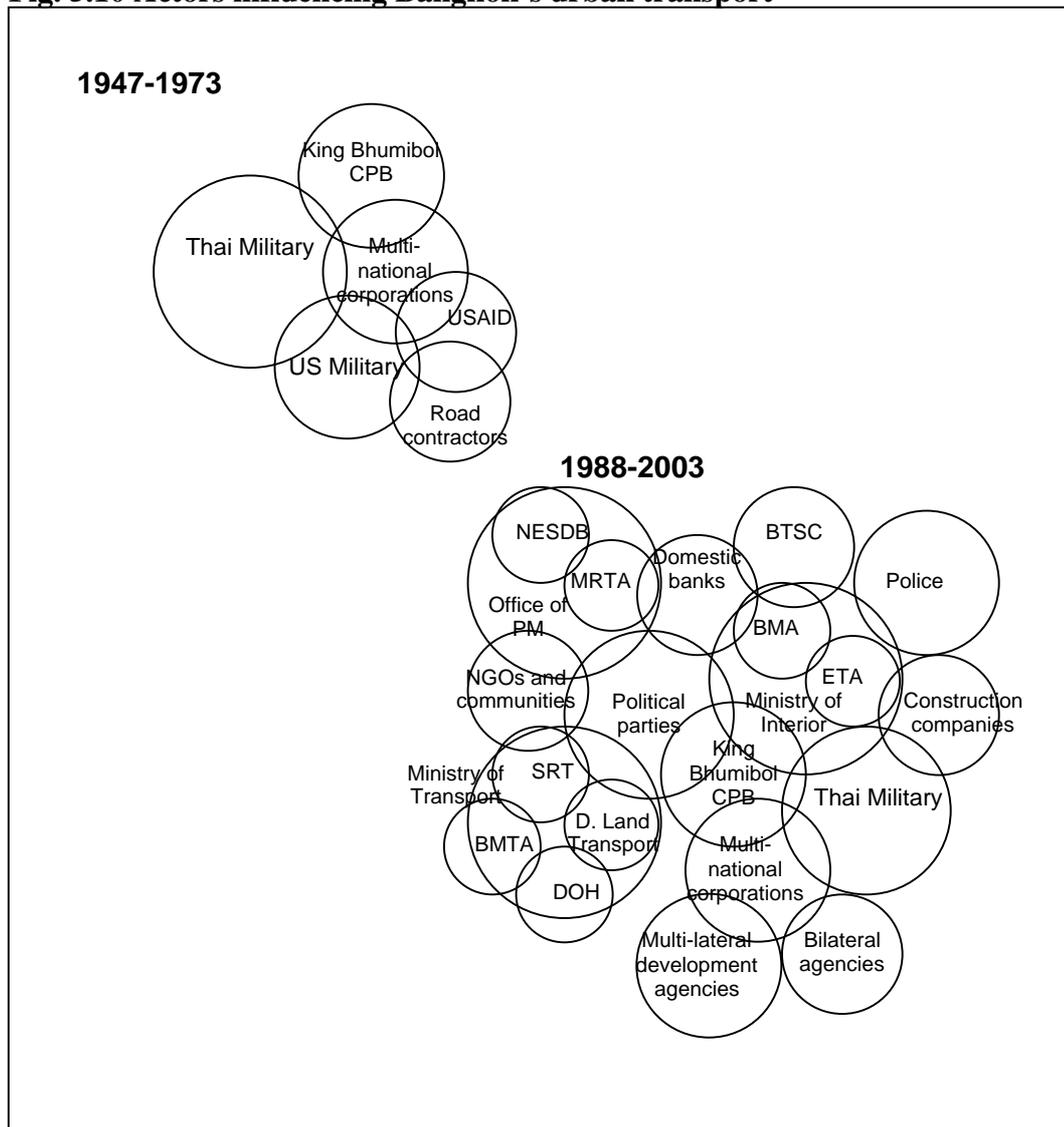
Nevertheless, the basic reluctance of the Cabinet to commit public funds to rail remains. In 2001, the new government of PM Thaksin followed its predecessors by supporting rail in principle up until a budget was required. As the MRTA subway tunnelling was completed and the contract for the rolling stock was awarded to Germany's Siemens, JBIC offered to finance an 8 kilometre extension with another low interest loan. However, the offer was turned down by the Finance Minister and the Budget Bureau on the basis that the financial returns to the state would be too low (*Bangkok Post*, 14 August 2001).

## **5.9 Conclusions**

Summarising the actors and relationships influencing large scale changes to Bangkok's urban transport is difficult because of their complexity, fluidity, and an overall lack of transparency in Thailand. Figure 5.10 discerns sets of actors in two key periods described in the case study. In the earlier stage (1947-1973 in Figure 5.10) the main actors were Thailand's military, the King and the Crown Property Bureau, and the US military. Mutual support was provided by these actors sharing

some interests in common at that time and together they influenced Bangkok's urban transport mainly through building trunk roads and encouraging private property development. Ancillary actors included US and Thai road contractors, and planners affiliated with US bilateral development assistance.

**Fig. 5.10 Actors influencing Bangkok's urban transport**



The later stage (1988-2003 in Figure 5.10) began with the greater entrenchment of Thailand's democracy in the late 1980s and reflected a wider shift toward a more pluralistic society less dominated by the military. While the importance of the military declined during this period, which was also marked by the increasing importance of domestic and foreign capitalist enterprises, there was a brief interlude in the early 1990s by a military coup d'état and subsequent installation of an interim, technocratically-orientated government. The proliferation of new actors amid rapid motorisation facilitated profit-making from urban transport infrastructure and road based transport operations, but this was not matched by the development of public actors which could have coordinated activities and mitigated the negative impacts of motorised urban transport. Large private profits and rents accrued to an array of actors with interests in transport infrastructure construction and operations, on a large scale (e.g. toll expressways) and on a small scale (e.g. illegal minibuses and motorcycle taxis). In addition, land development became increasingly important and connected to a network of high speed expressways providing a high level of mobility for certain segments of the society.

Political parties as actors increased in importance and were closely connected with particular government ministries (each with a proliferating number of government agencies involved in urban transport infrastructure and services) and private companies. NGOs and some organised communities were able to curtail the influence of the aforementioned powerful actors and their grand, profit-oriented schemes. Notably, a NGO influenced the configuration of Bangkok's planned rail rapid transit projects, while a tightly-knit community organised and made links with political parties in order to defeat a planned expressway. Notwithstanding these isolated "wins", the quality and quantity of public transport declined while motorisation and its attendant social and environmental impacts continued to rise.

## **KUALA LUMPUR: RACING TO MOTORISE AND INDUSTRIALISE**

### **6.1 Introduction**

Kuala Lumpur began inauspiciously as a tin mining town and administrative outpost in the late nineteenth century when the British empire controlled the main cities in peninsular Southeast Asia. By the late twentieth century, Kuala Lumpur had emerged as a globalising metropolis and cosmopolitan capital of a newly industrialised nation. While changes in Kuala Lumpur have been rapid and extensive, critical research on the process is only now emerging (Bunnell et al., 2002). This case study is an addition to a relatively sparse body of literature.

Changes to urban transport have paralleled this transformation, and Kuala Lumpur's urban transport now stands out as exceptional in many respects. Kuala Lumpur has gone from having relatively little transport infrastructure to having the most expressways and roads per capita than any other large Asian city. Together with Bangkok, Kuala Lumpur has the highest per capita levels of motor vehicle ownership and use in Asia (Barter, 1999). Related to this high level of motorisation, Kuala Lumpur has one of the highest levels of traffic accident fatalities in Asia. However, because population density is unusually low compared with other large Asian cities, the Klang Valley, Kuala Lumpur's metropolitan region does not suffer from the motor vehicle congestion and highly concentrated transport emissions that face Bangkok and other dense Asian mega-cities. In spite of the relatively low and declining population density, beginning in the 1990s an extensive amount of rail infrastructure has been built. These rail systems, like the expressways, have been built by private companies awarded government concessions on a BOT model of infrastructure development. Kuala

Lumpur may have more large urban transport BOT projects than any other city in the world.

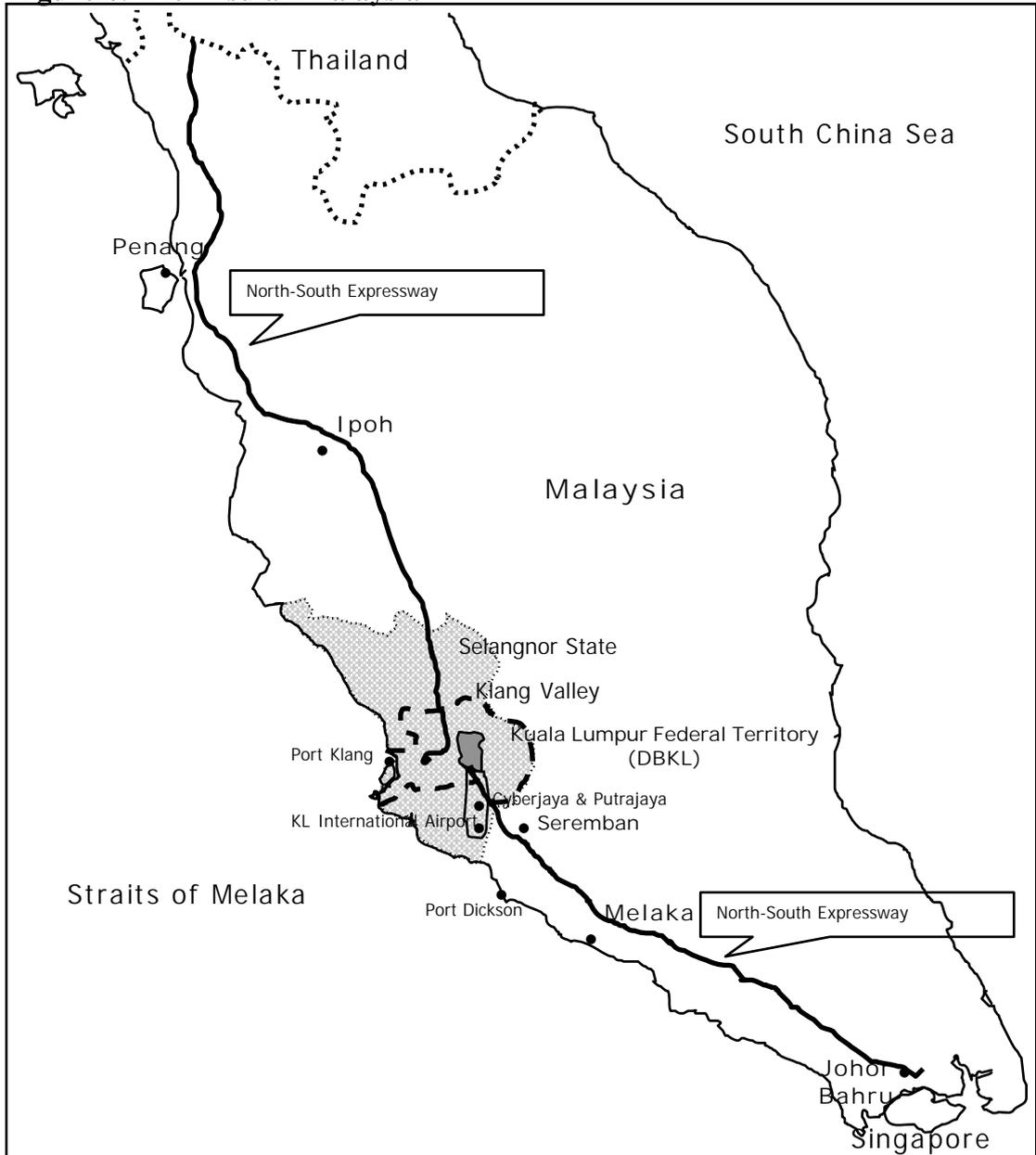
This chapter chronicles the remarkable recent history of urban transport in Kuala Lumpur. It begins by briefly summarising some of Kuala Lumpur's early history, before focusing attention on the post-colonial period in which most of the big changes have occurred. Broadly, Kuala Lumpur's recent transport history can be divided into two distinct periods. The first period lasted for approximately one decade and was characterised by road building and the introduction of privately owned and operated minibuses. As discussed in Chapter 3, this was considered an exemplary low-cost model for cities in the developing world. However, government decisions in the 1980s and 1990s under the leadership of a new Prime Minister led to a shift away from the low-cost approach toward a highly motorised system and extensive road and rail infrastructure development. In the wake of the economic (and political) crisis that Malaysia faced in 1997-8, some changes have occurred, although it remains unclear whether processes and outcomes resulting will be substantially different from those of the recent past.

### **6.1.1 Kuala Lumpur's early transport history**

Kuala Lumpur's founding, in 1857, took place long after the Malay states of peninsular Southeast Asia had come under British stewardship. The small town of Kuala Lumpur served administrative functions in a region of tin mines and rubber plantations. Its importance was limited because the established Straits Settlements of Penang, Melaka, and Singapore were already serving the functions of integrating the Southeast Asian peninsula's economy with the world (Evers and Korff, 2000). Notwithstanding Kuala Lumpur's importance, along with Seremban, as a major

town in peninsular Southeast Asia's southern urban circuit, it remained subordinate to Melaka<sup>38</sup> and Singapore (Evers and Korff, 2000) (Figure 6.1).

**Figure 6.1 Peninsular Malaysia**



<sup>38</sup> For a long period of time, Melaka, south of Kuala Lumpur and on the coast, was “the undisputed centre of international and regional trade in Southeast Asia” (Evers and Korff, 2000:30).

The British built extensive roads on the peninsula beginning in the nineteenth century in order to establish political control over, and provide access to, the Straits Settlements. Kuala Lumpur was connected by roads to other centres on the west coast, but lacked the urban transport infrastructure found in Southeast Asia's larger cities. Kuala Lumpur's position changed one hundred years after its founding, in 1957, when it became the first capital of the independent Malay states, or "Malaya", after colonial Britain's departure from the peninsula. As a result, Kuala Lumpur assumed a central role in the task of nation-building. This function became more pronounced after Singapore departed the federation in 1965.<sup>39</sup> While Kuala Lumpur's importance grew in the late 1950s and through the 1960s, it still had a relatively meager amount of roads and lacked the electric tram network which could be found in all other Southeast Asian capitals at that time. The urban transport system depended primarily on walking and non-motorised vehicles, while public transport was provided by ethnic Chinese family-based bus companies. Privately-owned motor vehicles were relatively few in number but growing along with problems associated with large vehicles in the densely-populated, mixed use urban area. No major actions were taken to change this state of affairs.

In the first decade after independence, the structure of the economy did not change much, and processes of urbanisation and industrialisation continued much as they had during the colonial period. Urbanisation and industrialisation continued to be concentrated on peninsular Malaysia's west coast, although Kuala Lumpur and its peri-urban areas began to serve as a hub superseding Penang and Melaka (Evers and Korff, 2000). A World Bank study proposing national industrialisation programme found that at independence, peninsular Malaysia's road and rail

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<sup>39</sup> In 1963, when Sabah, Sarawak, and Singapore joined the Federation, "Malaya" was renamed "Malaysia".

network was relatively extensive and well maintained, and no major programme of new infrastructure development was proposed (IBRD, 1955).

Just as the spatial structure of urbanisation and industrialisation endured in peninsular Malaysia, so too did entrenched social inequalities. Following national independence, Malaysia's economy retained many of the characteristics of the colonial period, including patterns of uneven development, economic disparities, and social divisions (Khoo, 2001). Ethnic Malays or *bumiputera* ("sons of the soil") resided mainly in rural areas and worked in the agrarian economy, in addition to dominating the government bureaucracy. The world of business remained dominated by "invisible" foreign (mainly British) large corporate enterprises and locally more "visible" Chinese family and clan-based capitalist enterprises. The first ruling political coalition, the conservative Alliance, comprised the United Malays National Organisation (UMNO), Malayan Chinese Association, and Malayan Indian Congress. Each party was seen as reflecting the interests of each of Malaysia's three large ethnic groups: Malays (60% of the population), Chinese (30%), and Indians (8%). The policies of the coalition were *laissez-faire* toward the economy and industrialisation.

A lack of state redistribution of resources in an economy with entrenched inequalities led to growing social disparities which increasingly became a source of dissatisfaction often expressed in terms of antagonism between ethnic groups. Principally, there was widespread resentment among the Malay population expressed toward the Chinese, who were viewed as succeeding economically at the expense of Malays. During a period of political and social instability in 1969, inter-ethnic communal violence, or riots, erupted on the streets of Kuala Lumpur. In the wake of this violence, the UMNO-led government began focusing attention on how to lessen economic disparities between major ethnic groups. It was concluded by the government that the violence resulted from the discontent of

Malays with their social status and incomes compared to other ethnic groups, and mainly to the ethnic Chinese.<sup>40</sup> The imperative to alleviate this discontent was to come to dominate many state actions including those influencing urban transport in Kuala Lumpur.

## **6.2 The New Economic Policy (NEP), roads and minibuses**

The first concerted government attempt to shift from a *laissez-faire* economy toward more interventionist collective actions addressing Malay grievances and economic disparities was the formulation of the New Economic Policy (NEP). The NEP was introduced in Malaysia's second national development plan under Prime Minister Tun Abdul Razak in 1971. The NEP was intended to address the socio-economic status of Malays by increasing Malay participation in commerce and business. The *Second Malaysia Plan* was imbued with ideas for engineering the society into a more just and economically balanced pattern:

A stage has been reached in the nation's economic and social development where greater emphasis must be placed on social integration and more equitable distribution of income and opportunities for national unity and progress. This direction towards national unity is fundamental to the New Economic Policy. The Second Malaysia Plan, based on this Policy, is designed to facilitate the achievement of the national objective. It marks a new phase in the economic and social development of Malaysia. It represents an important stage in the series of development plans designed to eradicate poverty among all Malaysians, irrespective of race, and to restructure Malaysian society in order to correct racial economic imbalance, in the context of an expanding economy, leading towards the creation of a dynamic and just society (Malaysia, 1971:1).

The means of addressing these imbalances were identified in the plan as state participation in establishing capitalist enterprises designed to increase the share of Malays within a growing national economy:

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<sup>40</sup> The interpretation has been disputed by some, who argue that it was mostly Western (and British in particular) firms which owned the means of production, but it was the Chinese who owned local shops and small businesses, which thus became the target of Malay discontent (e.g. Khoo, 1995, 2001).

The Government will participate more directly in the establishment and operation of a wide range of productive enterprises. This will be done through wholly-owned enterprises and joint ventures with the private sector. Direct participation by the Government in commercial and industrial undertakings represents a significant departure from past practice. The necessity for such efforts by the Government arises particularly from the aims of establishing new industrial activities in selected new growth areas and of creating a Malay commercial and industrial community (Malaysia, 1971:7).

In certain respects, the NEP and the Second Malaysia Plan were not radical departures from the status quo. They reaffirmed industrialisation, economic growth, and a capitalistic model of development as inherently good. They identified new industrial activities and some new growth areas which were supported by an emphasis on building rural and regional roads in the Second and Third Malaysia Plan. Overall, the focus on industrialisation reinforced the economic importance of Malaysia's more urbanised west coast corridor with its ports and other physical and social infrastructure. An emphasis on developing rural and regional roads provided some activity further away from the west coast, but many other actions reinforced the growth of Kuala Lumpur and its environs. The main change that the NEP marked was that the government was to become more involved in industrialisation processes which had previously been undertaken mainly by private companies. The growth in the government role led to the creation of extensive new opportunities for Malays in particular in Kuala Lumpur, the centre of the national government administration. Evers and Korff (2000) attribute much of Kuala Lumpur's growth at this time to bureaucratisation. In addition, educational opportunities for Malays were expanded. The most important national institutes of higher learning were located in Kuala Lumpur and other centres on the west coast.

Along with the growth of Kuala Lumpur came some urban transport problems. In particular, there was dissatisfaction with public transport. This dissatisfaction

was articulated even before the 1969 riots and the introduction of the NEP. In 1967, at a public forum on a draft town plan for Kuala Lumpur, a local architect and town planner bemoaned the lack of proposals for “trains, subways, monorails for people who can’t afford to come to the city by cars” (Malaysian Institute of Architects, 1967:16). In 1974, just before a general election, Prime Minister Tun Abdul Razak included rail mass transit for Kuala Lumpur in his election manifesto, and a Malaysian team was commissioned to study mass rapid transit systems around the world. The team undertook studies of mass rapid transit systems in 30 cities in Europe, USA, Hong Kong, Canada, Japan and South Korea, and the team argued that not only was a rail mass transit system feasible for Kuala Lumpur, but that a proposed system in conjunction with land development projects could yield profits totalling \$345 million over the first 15 years of operation (*Malaysian Business*, 1977). In spite of these optimistic revenue projections, the government did not take actions to implement or fund the proposal but continued a process of planning future rail systems.

At the time of the NEP implementation and emerging industrialisation, the World Bank financed large urban transport projects, training, pre-investment studies, new technology, and project implementation (Leng, 1986). This involvement began in 1973 when a US-based private consulting firm working for the World Bank produced the *Urban Transport Policy and Planning Strategy for Metropolitan Kuala Lumpur* (Wilbur Smith and Associates et al, 1974). While rail mass transit was on the Malaysian government’s agenda for Kuala Lumpur, the plan financed and overseen by the World Bank dismissed these ideas on the basis that:

The projected 1990 public transport traffic does not reflect volumes of the magnitude or pattern associated with fixed rail facilities, nor is the projected traffic beyond the capacity of urban bus services. Further, the capital investment required for a fixed rail facility to serve the urban area would be excessive (Wilbur Smith Associates, 1973:ix).

In addition to advising against pursuing rail development, the consultants recommended that an abandoned rail line in Kuala Lumpur be paved for use as a busway. The strategy was generally pro-motorisation, although in addition to recommending road building, also focused on a traffic limitation strategy. The proposed strategy was to manage vehicle flows and maximise the use of road-based public transport to reduce traffic congestion. At the same time, road expansion was recommended in order to achieve a "...continuous, workable and adequate road system capable of serving anticipated 1990 traffic volumes within acceptable levels of peak-hour congestion" (Wilbur Smith Associates, 1973:12-12). The recommended plan included managing and charging for central city car parking and greater segregation of pedestrian and motor vehicle traffic in the central core area. However, it was argued that implementation of this traffic limitation programme wait until substantial improvements to the bus-based public transport system were made (Ibid.). Recommended public transport improvements focused on means of upgrading the quantity and quality of bus services, and introducing busways as a viable alternative to the private car (Wilbur Smith Associates, 1973).

While the 1973 strategy was not implemented in a coordinated way, it influenced actions taken under the World Bank's first ever urban transport project loan, provided to the Malaysian Government as part of the Second Kuala Lumpur Urban Transportation Project. Most of the loan was used in 1975 to establish a fleet of 400 privately-owned and operated minibuses began serving Kuala Lumpur commuters in competition with the existing, larger stage buses. The World Bank advisors had argued that "an open market mechanism could operate in the public transport sector to improve services" (Jamieson Mackay & Partners, 1981:6). From the point of view of one of the World Bank advisors, writing soon after the project began, the minibuses were very successful due to the unexpectedly high productivity, passenger demand, and operating costs (Walters, 1979). While the

system started with five routes and eight terminals in 1975, by 1979 it had expanded to sixteen routes and eighteen terminals and the number of minibuses also increased (Nor, 1987). Proponents of “the low cost, unconventional approach” to urban transport celebrated Kuala Lumpur’s minibuses as a success (Rimmer, 1986b; Leinbach and Sien, 1989). From the perspective of the small-scale Malay entrepreneurs providing the profitable services, the national government pursuing economic restructuring under the NEP, and much of the public transport-dependent public, the minibuses were successful.

However, this interpretation drew some criticism on the basis that the World Bank’s assessment of the benefits had omitted many of the social and environmental costs of minibuses. For example, the minibuses were drawing passengers from conventional operators rather than increasing the total volume of services, while also requiring long staff shifts as well as very optimistic assumptions about the working life of minibuses (White, 1981). In addition, patronage was boosted with the assistance of the authorities, who would ignore violations of minor traffic laws and contravention of safety standards such as passenger loading (Nor, 1987). As a result of low overheads and lack of regulation and allowing to charge more than the stage buses, minibuses offered services that were more frequent and faster than the stage buses (Nor, 1987).

The motivation of the Malaysian government to implement the minibus project was not entirely clear. The World Bank advisor quoted above viewed the rationale of the Malaysian government as “the need to expand bus transport capacity”, “the belief that mini-bus services would reduce urban congestion by inducing existing and incipient motorists to forego their private car trips”, and that additional public transport capacity would be required because an area road-pricing scheme similar to Singapore’s was planned (Walters, 1979:320-1). That the government allowed all of these objectives to go unfulfilled in subsequent years suggest that these were

not the motivations of the Malaysian government, but those of the World Bank technical team. Alternatively, while possibly supporting these objectives, the Malaysian government may not have had the ability to achieve the results.

Another account suggests that from the Malaysian government's perspective, the existing bus companies, which were owned by Chinese family businesses, were not capable of fleet renewal or service expansion (Jamieson Mackay & Partners, 1981). The introduction of minibuses owned and operated by Malays contributed toward the *Third Malaysian Plan* objective of Malay ownership of 30 per cent of all commercial sectors (Jamieson Mackay & Partners, 1981:6). The ethnic Chinese stage bus operators were obliged to reduce their services in the face of competition from the minibuses, so that the public transport service, as a whole, did not show any significant increase in passenger capacity from 1975 to 1978 (Jamieson Mackay & Partners, 1981).

### **6.3 PM Mahathir, privatisation and industrialisation**

In the early 1980s, changes in Malaysia's national political leadership (and in the global political economy) heralded the beginning of a new approach to addressing Malay economic disadvantage. In the first decade of the NEP, privileges were extended to the Malay general population in urban and rural areas, although the expansion of civil service employment and education opportunities for Malays were concentrated mainly in urban areas. However, not all Malays were satisfied with the results. One Malay who questioned many of the policies and programmes was Dr. Mahathir Mohammed, a medical doctor and newspaper columnist who in the late 1960s and early 1970s as a member of UMNO had openly challenged Malaysia's first Prime Minister, Tunku Abdul Rahman, and the UMNO establishment. Mahathir staunchly supported government promotion of Malay capitalism, but was critical of the NEP, which he viewed as ineffective and creating a Malay dependence on subsidies. Mahathir believed that Malays

should compete in a more open-market, less protectionist environment. He had an “antipathy to the bureaucratic establishment and the conventional channels of policy implementation” that was both personal and political, and viewed a competitive private sector as the engine for Malaysia’s development (Searle, 1999:47).

In 1981, UMNO’s Dr. Mahathir Mohammed rose to become Prime Minister of Malaysia. The PM acted on his beliefs and led a government shift away from preferential treatment of Malays as a group to more selective targeting of government assistance to individual Malay capitalists. In addition, the government was directed to favour larger over smaller companies (Gomez and Jomo, 1997). In theory, this was intended to wean Malays from government subsidies and dependency, and to reward the harder-working and more competitive Malay individual capitalists and companies. In practice, preferential treatment came to be closely tied to personal relationships with the PM and his close associates in UMNO. As a result, the nexus between politics and business became “both more apparent and firmly established” with the elevation of PM Mahathir, who was driven by an ambition to transform Malaysia into a modern industrialised society through policies encouraging private sector participation (Searle, 1999:46).

One company which was intimately linked to UMNO, and which received preferential treatment beginning in the 1980s was Renong, an investment conglomerate that owned a large number of *bumiputera* companies (Gomez and Jomo, 1997). By mid-1991, through an “intriguing network of cross-holdings involving a number of private and publicly listed companies”, Renong had significant interests in media, construction, and financial securities and was run by a “coterie of young *Bumiputera* executives” (Gomez and Jomo, 1997:52). It also had interests in heavy industry, property development, infrastructure, and utilities. In the 1980s and most of the 1990s Renong was headed by Halim Saad, a

close associate and protégé of a businessman, Daim Zainuddin, who served as Finance Minister under PM Mahathir (Ibid.).<sup>41</sup> Saad and his wife held shares and other interests in a number of companies closely linked to UMNO, and until the early 1990s Renong was directly owned by UMNO (Ibid.).

The means through which companies serving as vehicles for Malay business interests came to receive state support was through the mechanism of privatisation. Mahathir defined privatisation as “the transfer of government services and enterprises to the private sector” (Khoo, 1995:132). Over the 1980s, privatisation in Malaysia came to encompass “the sale or divestment of state concerns; the sale of a portion of the shares of a state-owned public company; the sale or lease of state-owned physical assets; the private financing of public works projects on various kinds of ‘build-and-operate’ arrangements; the contracting out of selected public services to private firms; and the introduction of competition into areas of state monopoly” (Gomez and Jomo, 1997:8). In 1991, the EPU under PM Mahathir released a “Privatisation Master Plan” which was promoted as an instrument “to enable the public and private sectors to be better informed about the policies”, and to promote privatisation as well as investment opportunities (Malaysia, 1991).

The implementation of privatisation was accelerated by a severe economic recession in 1984-85 when commodity prices declined and demand for Malaysia’s manufactured products weakened. This provided additional impetus for a transition from policies of state intervention and an emphasis on ownership restructuring, to policies emphasising economic liberalisation, deregulation, profit, growth and public sector restraint (Searle, 1999). The Malaysian government,

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<sup>41</sup> Daim Zainuddin served as Finance Minister from 1984 until 1991, as Special Functions Minister in 1998 during the economic crisis, and again as Finance Minister from 1999 until 2001.

particularly the Economic Planning Unit (EPU)<sup>42</sup> under the Office of the Prime Minister, enthusiastically embraced infrastructure privatisation which had long been supported by free market economists and institutions such as the World Bank, which argued that the “worldwide trend towards economic liberalization” led to the conclusion “that there are fewer activities requiring public intervention than once was believed” (Kessides, 1993:ix).

In practice, privatisation policy led to controversies over “enhanced private control of key economic activities and further concentrated ownership and control of corporate equity in the hands of a multi-ethnic, politically influential minority” (Gomez and Jomo, 1997:1). While the government, through the NEP, had achieved earlier successes in reducing poverty and increasing the size of Malay middle and business classes, there were growing concerns about the impact of political patronage on equity in Malaysian society. Over the years, PM Mahathir has responded to these concerns by centralising political control in the office of the Prime Minister and by undertaking authoritarian actions to stifle dissent and opposition. With growing frequency an Internal Security Act, which allowed for detention without charges, was used to detain opposition politicians, activists, and dissenters. In conjunction with privatisation, under PM Mahathir, power was increasingly centralised in the hands of the PM and Cabinet, while the legislative and judicial arms of the state experienced a diminution of powers through a spate of amendments to the constitution during the 1980s (Gomez, 1994).

This centralisation of power in Malaysia extended to the political and administrative control over Kuala Lumpur. In 1974 Kuala Lumpur had been declared a Federal Territory and controlled by a Federal Territory Ministry. In 1987 the Cabinet under Mahathir’s leadership dissolved the Federal Territory

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<sup>42</sup> The EPU was a centralised planning agency created with the advice and support of the World Bank, and was designed to prepare Malaysia’s five-year national development plans, analogous to Thailand’s National Economic and Social Development Board (NESDB).

Ministry in order to place administrative control over the Federal Territory Authority (Dewan Bandaraya Kuala Lumpur or “DBKL”) directly under the Office of the Prime Minister. This change was attributed to the Prime Minister’s “personal interest” in the development of DBKL, which as of the late 1980s had no interfering state authority and a substantial revenue base favouring the capacity for borrowing capital (Phang et al, 1996:36). The Mayor of DBKL became an appointee of the Prime Minister. In the 1990s, the PM’s control over the growing urbanised area was further extended when he articulated a vision of a corridor of development stretching south of DBKL to the site of a new international airport. A special development committee was formed under the PM to direct development in this zone which would otherwise have been under the authority of the Selangor state government (Figure 6.1). In 2001 Putrajaya, part of the new corridor development and a new administrative centre for the national government was also declared a federal territory.

Mahathir’s power was further consolidated in 1999 and 2000 as Malaysia entered a period referred to as “autarky” (Khoo, 2001). The roots of this change lay in conflicts over the state of Malaysian conglomerates used by Mahathir as vehicles for the advancement of Malay capitalists. Much of the conflict was between the PM and his Deputy PM. The 1997-8 Asian financial crisis threatened the domestic conglomerates which had been at the centre of Malaysia’s industrialisation and development from the early 1980s until that time. Many of the difficulties faced by the conglomerates, particularly Renong, the former business arm of UMNO, resulted from transport infrastructure investments. The question of how to handle these problems led to conflict within the UMNO elite when prescriptions proposed by the International Monetary Fund (IMF) and the World Bank for greater liberalisation and less “cronyism” were supported publicly by Deputy PM Anwar Ibrahim. In addition, Mahathir and Anwar had subtly (but

publicly) differed over a proposed reverse takeover of Renong, the cash-strapped conglomerate, by UEM (Khoo, 2001).

In addition, Mahathir and Anwar clashed over rescue plans for several conglomerates, monetary policy, and the need for reform (Khoo, 2001). While the exact circumstances are unclear, Gomez (2001) alleged that the differences between Mahathir and the former Deputy PM were the result of Anwar's opposition to a proposed government acquisition of the assets of a debt-ridden company owned by Mahathir's eldest son. Whatever the case, Mahathir eventually had Anwar arrested on charges of sodomy and corruption and he was sentenced to 10 years imprisonment amid an international outcry and a domestic protest movement demanding "reformasi" or reform. The jailing of Anwar was followed in mid-2001 by the resignation of the long-serving Finance Minister and Mahathir's "once most-trusted ally" Daim, whose private business interests allegedly clashed with one of the PM's sons' involvement in a bank-consolidation exercise (Gomez, 2001). After this political purge and the institution of capital controls to insulate Malaysia from further financial crises (and pressures for a more open economic and investment regime), in late 2002 Mahathir announced that he would step down in late 2003, after 23 years as Prime Minister.

The indelible mark of Mahathir and the mixing of business and politics that has characterised his regime are evident in the peculiarities of Kuala Lumpur's urban transport system. The promotion of UMNO-linked companies such as Renong, privatisation, authoritarianism, and centralised control over DBKL have all influenced the processes shaping urban transport in the Klang Valley. The sections that follow analyse a number of interrelated actions shaping urban transport in the 1980s and 1990s until the promotion of motor vehicle manufacturing, the Multimedia Super Corridor, private expressway development, and private rail development.

### **6.3.1 Promoting motor vehicles**

In 1980, while he was Minister of Trade and Industry, Dr. Mahathir established the state-owned Heavy Industries Corporation of Malaysia (HICOM) which was designed to further Malaysia's incipient industrialisation. The project was loosely modelled on the experience of Northeast Asia's "developmental states", and particularly Japan and South Korea, where domestic business conglomerates cooperated with national governments in furthering national industrialisation. After becoming Prime Minister in 1981, Mahathir brought HICOM directly under the Prime Minister's Department and used it to launch a national 'heavy industrialisation' drive. HICOM rapidly negotiated several large manufacturing joint ventures with Japanese and South Korean multinational corporations. The most celebrated projects which had implications for Kuala Lumpur's urban transport were a 'national car project', Perusahaan Otomobil Nasional or National Automobile Industry (PROTON), and three motor-cycle engine factories (Khoo, 1995). The motor vehicle manufacturing industry was established at Shah Alam on the western outskirts of Kuala Lumpur.

While loosely based on the experience of Japan and South Korea, Malaysia's industry differed in a number of respects. One was that due to a relative scarcity of skilled labour and technological capacity in Malaysia, agreements were signed with Japan's Mitsubishi Motors, which eventually took a large stake in PROTON. Another was that the automobile industries in Japan and South Korea had begun producing for export, but Malaysia's national car was produced first for domestic consumption. Given the concentration of people and wealth in Kuala Lumpur and its region, this meant that a large share of these automobiles were purchased and registered in the capital city. Another was that because the domestic market was small, public subsidies to the automobile industry were required. Once PROTON cars were being produced, the government took

numerous measures to stimulate purchases. Funds were created by the government to create favourable loan repayment terms for automobile purchases, and promotions were targeted to civil servants.

However, the promotion of motor vehicle ownership does not automatically translate into vehicle use. A series of other actions taken under the leadership of PM Mahathir created the conditions under which the use of motor vehicles became more imperative and more convenient, although not necessarily cheaper, for motorists. One of these actions was the promotion of low density urban sprawl. Supporting this was an extensive network of relatively well integrated, but expensive, toll expressways. While not necessarily a conscious decision, the development of a rail network that was poorly integrated and expensive also facilitated motorisation.

### **6.3.2 The Multimedia Super-Corridor (MSC)**

Through the 1990s, a number of mega-projects were initiated by PM Mahathir who wanted to race Malaysia toward status as a fully developed, industrialised nation by the year 2020. Mahathir's mega-projects supporting his "Vision 2020" sprawled over a massive area in and around Kuala Lumpur's built up area.<sup>43</sup>

Underlying these projects was the effort of Mahathir and a coalition of public and private interests to position Kuala Lumpur as Malaysia's key "node" in global networks and in transnational flows of capital, people, and products (Bunnell et al, 2002). In addition to heavy industries, the vision expanded Malaysia's industrialisation to include high-tech development associated with information technology and computers.

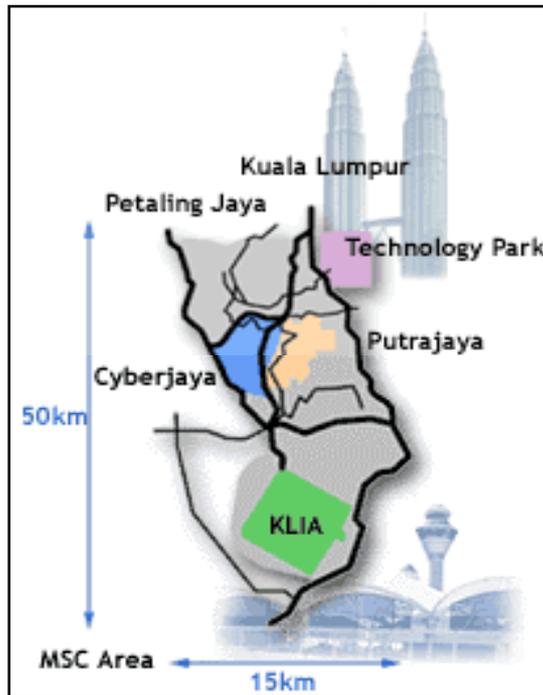
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<sup>43</sup> A few other mega-projects including telecommunications infrastructure and the launch of a new satellite, a dam, sea port facilities, and energy projects were outside or not focused only in and around metropolitan Kuala Lumpur.

A number of physical plans and policies designed to propel Malaysia toward Mathathir's Vision 2020 have been encapsulated in a new space, the "Multimedia Super-Corridor" (MSC), a massive region (50 km long and 15 km wide) encompassing sites in central Kuala Lumpur and stretching south to a new international airport (Figure 6.2). Due to the large area covered by the MSC and its planning in concert with high-speed toll expressways, the form of development encouraged lower-density, automobile-based suburbanisation of the larger Kuala Lumpur region.

The MSC is essentially a planned "technopole" based on the concept of a "technology park" designed to induce new industrial growth by attracting high-technology manufacturing firms to a "privileged space" resulting from government or university-related initiatives (Castells and Hall, 1994:11). The planners of Cyberjaya (literally translated as Cyber city) visited and sought to divine the secrets of planned and spontaneous technopoles around the world: Sophia Antipolis in France, Bangalore in India, Japan where a large scale technopolis programme has resulted in technopoles around the nation, and Silicon Valley in the USA (Bunnell et al, 2002).

**Figure 6.2 Multimedia Super-Corridor**



Source: [www.mdc.com.my](http://www.mdc.com.my) (accessed 25 June 2002)

The MSC's development is being led by a public-private consortium under the direction of the Multimedia Development Corporation (MDC), chaired by the PM and advised by an international panel including Bill Gates, the Chairman of Microsoft Corporation. The MDC has facilitated a higher degree of control by Mahathir over developments and actions taking place in the peri-urban fringe of Kuala Lumpur. While control over DBKL was vested in the Office of the Prime Minister since 1987, much of the MSC development was located in surrounding Selangor State. Although an UMNO-led coalition controlled the Selangor state government, there was apparently a need for greater control in order to facilitate mega-projects without opposition from competing, more localised interests. The creation of the Multimedia Development Corporation was an attempt to bring this territory further under PM Mahathir's control.

At the core of the MSC are two new urban centres: Putrajaya, a new government and administrative centre which in 2001 became a new Federal Territory, and Cyberjaya, a “model cybercity built for MSC companies and their knowledge workers” (Multimedia Development Corporation, 2001). Cyberjaya will offer “advanced infrastructure”, an “eco-friendly environment” based on “attractive low-density development” revolving around a “green axis,” “reserves” and “excellent infrastructure” (Multimedia Development Corporation, 2001). Commercial activities will be in one precinct while “hillside mansions, lakefront houses, and condominiums to suit varying family needs” will provide housing for affluent knowledge workers (Multimedia Development Corporation, 2001). While the theme emphasises “harmony with nature” and “environmental friendliness”, it is clearly designed on the basis of high resource consumption and automobile dependent cities of North America and Australia. Renong companies play a major role in property development in Putrajaya. They are also central players in the land development process through “project management and support services” for Cyberjaya’s 2,894 hectare “Flagship Zone”. Kinta Kellas, a Renong subsidiary, built the Multimedia University and gardens, a “smart school”, “Cyber Park”, and the low-density, exclusive Nusa Bistari residential enclave project (Renong, 2000:46-8).

In addition to these “green field” projects, the MSC was also wide and vague enough to encompass a real estate project which was already underway in central Kuala Lumpur at the time. This project, at the northernmost point in the MSC, was the Kuala Lumpur City Centre (KLCC) project which includes the Petronas Towers, the world’s tallest building and the headquarters for the state oil company. The 40 hectare KLCC is trumpeted as ranking “among the largest real-estate developments in the world” (KLCC Holdings Bhd, 1999). The project was implemented by an American firm which coordinated and managed 22 commercial developments located on the perimeter of a central public park (Figure 6.3).

Decisions by the Prime Minister facilitated the project which required circumventing the structure plan by utilising a race course for the project and building a new race course six kilometers to the south on government land, by ensuring covered parking for the buildings, and by taking measures to ensure access by cars and an underground rail station (UNCHS, 1999).

**Figure 6.3 KLCC Master Plan**



At the southern extremity of the MSC is the Kuala Lumpur Second International Airport (KLIA), Kuala Lumpur's second "globalising mega-project" following the KLCC (Bunnell et al, 2002). The project was announced in 1991 for a 10,000 hectare site, previously an oil palm plantation, and 60 kilometres south of central Kuala Lumpur. This location decision had ramifications for urban transport in Kuala Lumpur as it extended the metropolitan area to a new frontier and necessitated new high speed transport links to central Kuala Lumpur.

Linking together the disparate projects which the MSC was intended to knit together conceptually, were a series of privately-financed, built, and operated toll expressway and rail systems. The approach to building this infrastructure was based on the government provision of concessions in order for private companies to build and operate the infrastructure. While this approach has facilitated the creation of a massive amount of new urban transport infrastructure, it has also led to problems which were symptomatic of wider problems facing Mahathir's Malaysia. Because of the inter-linking of private sector objectives (i.e. profits) and public sector objectives (e.g. promoting Malay capitalists and industrialisation) the processes have led to mixed results that underlie deeper economic problems. More specific problems have become apparent through analysis of infrastructure development processes which have been relatively opaque:

The privatization program eschewed open competitive bidding. One of its principles was that prospective ventures were to be considered on a "first come, first served" basis. Under that policy, if private sector proponents of a privatization deal could present a proposal that the government deemed feasible and in the "national interest," they would get the project. Since proposals were treated as confidential and since no competitive bidding was required, little or no information was disclosed about such projects until the government announced their approval. Public debate on the commercial merits of the ventures was scant. Suggestions that Malaysia might do better by opening projects to competition were brushed aside (Pura, 1998:4).

While creating some problems for the Malaysian economy in general, the concession-led approach to urban transport infrastructure has also had significant impacts on urban transport changes.

#### **6.4 Private expressway development**

Before Mahathir became Prime Minister, a project to build a high speed limited-access road or expressway, from Singapore to Thailand was under construction (Figure 6.1). A section of the four lane expressway between Kuala Lumpur and

Seremban had been opened in 1977, and in 1980, the Malaysian Highways Authority was set up to construct the entire 848 kilometre highway including side links (Olszewski and Tay, 1996). At this time, the government had decided to seek external commercial funding against future toll revenues (Johansen, 1989). This was consistent with the emerging role of private companies in carrying out government projects. Early in the 1980s, some small road projects (e.g. North Klang Straits Bypass and Kepong Interchange) in and around Kuala Lumpur were privatised (Olszewski and Tay, 1996).

By 1987, sections of the North-South Expressway (NSE) comprising 324 kilometres had been completed, but the project was facing financial difficulties. In 1988 a bold step was taken and the project was restructured as a 30 year BOT in order to expedite completion of the remaining 458 kilometres (Olszewski and Tay, 1996). The restructured project, Malaysia's first major BOT, was contentious because UMNO politicians awarded the 30 year concession to a little known engineering company, United Engineers (Malaysia) Sdn Bhd (UEM), which had no experience and did not submit the most competitive bid, but was linked to UMNO and the same politicians awarding the concession. The leader of the parliamentary opposition tried to stop the government from awarding the RM3.4 billion contract to UEM, on the basis that PM Mahathir, Finance Minister Daim, and two other cabinet ministers who had taken part in the Cabinet decision to give the contract to UEM, were trustees and shareholders in Hatibudi, an UMNO-owned holding company which controlled 50 per cent of UEM (Khoo, 1994:278). Significantly, this claim was not denied by PM Mahathir, who suggested that the project's purpose was to generate profits which would be used to construct a new headquarters for UMNO in central Kuala Lumpur (Gomez and Jomo, 1997).

In addition to a blatant conflict of interest, what was also controversial about the deal was that the government provided RM 750 million credit to the company,

although this amount was reduced from RM 1,650 million after a public outcry (Anti-Penyelewengan, 1989). Other criticisms of the deal were that UEM was to be guaranteed minimum traffic volume and toll collections for 17 years by the government, and to be compensated for shortfalls in toll collection (Anti-Penyelewengan, 1989). Finally, UEM was exempted from various taxes estimated to cost the government about RM 2,650 million and offered guarantees against devaluation, rising interest rates, delays and appreciating costs worth about RM 1,150 million: the latter were withdrawn when they became public knowledge (Ibid.). Nearly half of the NSE had been constructed by the Malaysian Highways Authority at a cost of RM\$3 billion when it was handed over, and the government subsidised loans to UEM, which international investors and money markets found too much of a risk (Handley, 1997). Thus, while the privatised NSE generated profits for its concessionaire, the project was built on direct and indirect subsidies, on risk absorbed by the government, and no clear gains in efficiency of infrastructure development (Handley, 1997).

In addition to the financial aspects of the NSE, there were other interests served by the project. Finance Minister Daim later suggested that the privatised project was devised to stimulate the national economy during the regional recession:

I looked at the U.S. in 1929. ... What they did was build highways. We had excess cement, 60,000 Malay graduates looking for work, and we had a car industry producing cars no one wanted. ... That [North-South] highway ... was the biggest single factor in turning the country around (Daim quoted by Spaeth, 1996).

While this interpretation seems a bit fanciful (all Southeast Asian nations faced a recession at that time, and all emerged in 1987 when foreign investment, mainly from Japan, began flooding the region) the Expressway project was associated with the beginning of a new era of industrialisation and economic growth in Malaysia. Where the NSE was undoubtedly successful was in reducing road travel time from the Thai border to the Singaporean border by half. Another clear success

was in raising the level of experience, size, and profits of Malaysia's construction companies, and in particular the UMNO-linked UEM.

At the opening of the entire NSE in 1994, Deputy Prime Minister Anwar Ibrahim affirmed that the NSE would reduce travelling time and would boost the west coast's industrial growth, particularly in small and medium scale industries which would "create socio-economic opportunities for the people" (*The Straits Times Weekly Edition*, 1994:10). According to one of the Malay managers at the private company: "Privatisation has allowed the Government to fulfil its obligation to the provide the people with good and safe roads. The NSE is just one of its products" (Roslan quoted in *New Straits Times*, 1999).

Assessing the extent to which public objectives were met is virtually impossible due to the lack of a public policy framework or national transport strategy against which performance of private road concessions in Malaysia can be measured (Asian Development Bank, 2000). Globally, the completed NSE enhanced the international prestige of Malaysia and Dr. Mahathir: the international edition of *Time* featured the Malaysian PM on the cover as "Master Planner" and the NSE was listed as one of his main accomplishments (Spaeth, 1996).

Following the opening of the NSE, Malaysian construction companies turned their attention toward new opportunities for building private expressways and other projects. The construction of the NSE had served to nurture a pool of Malaysian road professionals from both the public and private sector and they now sought new projects. Most were located in Kuala Lumpur, which was the largest concentration of population, wealth, and motor vehicles in Malaysia. Some private companies ear-marked projects which had been identified in various plans prepared for Kuala Lumpur over many previous years of planning. However, in the absence of public plans or a framework prioritising routes, timing, and the

relationship between trunk routes and networks, it was the private construction companies which identified the potential projects and then proposed them to the government.

Because there is no public framework of transport policy involving checks and balances on private interests, there is no basis for the government to reject any private proposal for road infrastructure development. Projects have been developed in isolation from their impact on overall networks, and there has been little attention paid to the wider economic, environmental, or social impacts of the projects and the distributional effects of those impacts (Asian Development Bank, 2000). The government-appointed role of the Malaysian Highways Authority is to oversee the construction and maintenance of expressways by private companies, as well as ensuring “compliance” with “user safety and comfort requirements”, and perhaps most importantly, auditing traffic volume figures for the purposes of concession agreements and revenue monitoring (Santhiman, 1998). Significantly, the public authority which until the 1970s identified and planned projects, by the 1990s had virtually no influence over the location, phasing, or decisions surrounding highway projects. Such decisions had by then devolved in a de facto way to the private sector.

Many of the private expressway projects were initiated by *bumiputera* companies linked to UMNO and the ruling *Barisan Nasional* coalition. Some of these projects were initiated not just because of profit considerations, but also because they supported elements of PM Mahathir’s Vision 2020. A Renong-owned company built the 51 kilometre Central Link Expressway which provides access to Putrajaya, Cyberjaya and the new Kuala Lumpur International Airport.

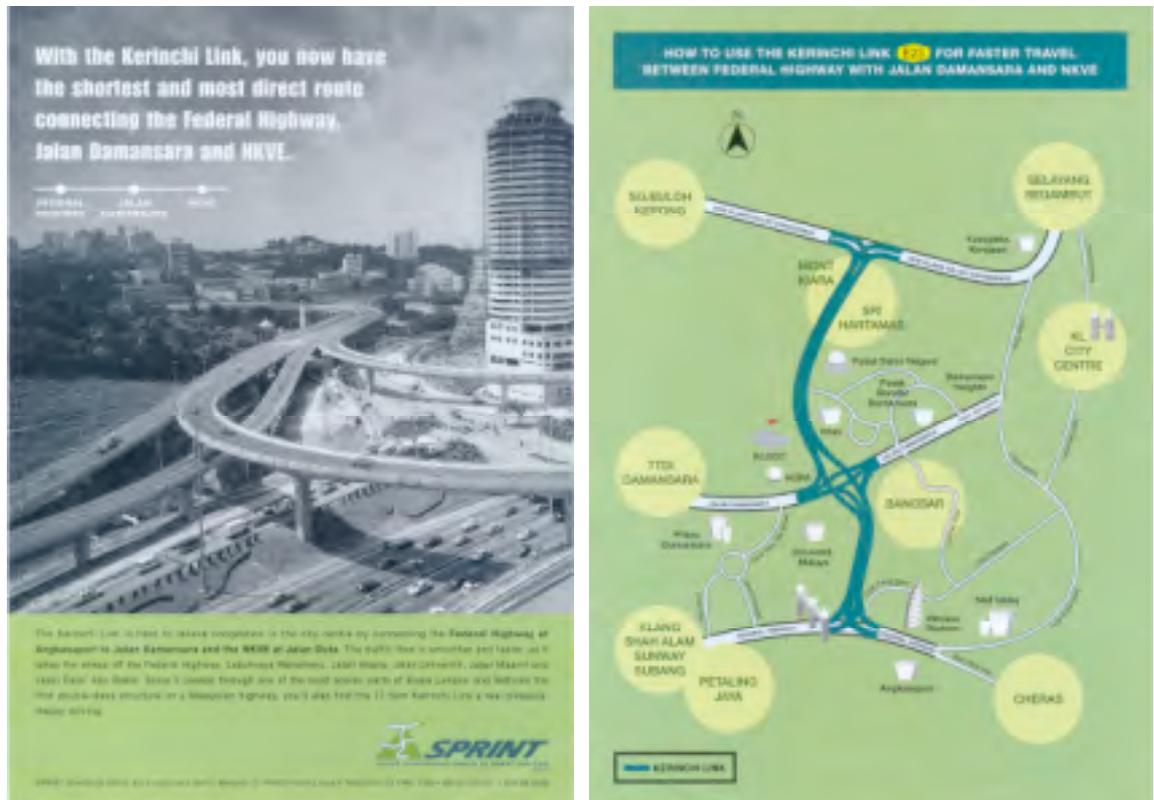
Other firms with less close linkages to UMNO pursued more commercially viable expressway projects. One particularly successful company in developing

privatised expressways in Kuala Lumpur (in addition to its other businesses in construction, property development, manufacturing, quarrying and plant hire) was Gamuda. Unlike Renong and some other private infrastructure concessionaires, Gamuda is not a *bumiputera* company, as it is owned by a Chinese-Malaysian, who is related to a former Bank Negara Deputy Governor (*Malaysian Business*, 16 September 1998). There is *bumiputera* participation on the company's board, which includes a daughter of the Sultan of Perak and a former Director-General of the Public Works Department (Ibid). While some concessionaires had major financial difficulties beginning in 1997, Gamuda emerged relatively unscathed, possibly because it was less dependent on government patronage and had chosen toll expressway routes projects which were more commercially viable. According to "industry sources", Gamuda:

...proposes a project to the government, supported by indepth studies [which identify routes with existing and potential high volumes of automobile traffic]. Then, it takes a minority stake in a joint-venture company that has been awarded the privatised contract, and undertakes the construction work. 'This way,' says an analyst, 'Gamuda earns for construction work done and also secures revenue when toll collection starts.' (*Malaysian Business*, 16 September 1998:8).

Nonetheless, under one concession agreement with Gamuda ("SPRINT") the government handed over a large section of public road as part of the agreement. Due to the lack of a clear public regulatory environment and clear stipulation of the goals and objectives of private expressway projects, the process was ad hoc and opaque. It wasn't until after the new expressway began revenue operations that the local municipal council came forward to clarify that one "public" road feeding into the tollway had previously been under the jurisdiction of the Federal Territory (DBKL) had been "surrendered" to the concessionaire which would maintain and operate the formerly public road (*The Star*, 2002). The SPRINT expressway is "knitting together" other toll expressways, although increasing the overall cost to motorists (Plate 6.1).

**Plate 6.1 Advertising for new segment of toll expressway**



Source: Adapted from Gamuda (2001)

As with most of the infrastructure concessionaires, Gamuda also earns profits from real estate development close to its toll expressways. Gamuda’s property development arm is a joint-venture company with Hicom Holdings Bhd., the government enterprise established by PM Mahathir to further heavy industrialisation in Malaysia. In 1996, the joint venture launched Kota Kemuning Township, a large-scale property development comprising 8,000 residential, commercial, and industrial units spread over 1,820 acres which have been designed “based on a green and low density development concept” (Gamuda, 2001) (Plate 6.2). The property development has been made possible by private expressway infrastructure built and operated by a Gamuda concession company (Kesas): in a synergistic relationship, the expressway has made the property development possible while also creating a toll revenue stream for Kesas from the automobile-

dependent suburb. In addition to the toll expressway and the township, HICOM-Gamuda spent RM 90 million building an expressway interchange (*The Star* 15 November 2000). The local municipal council asked for five other private real estate developers building projects in the area to bear the cost of a second RM 80 million interchange 2 kilometres from the first one over the Kesas (Gamuda) expressway, although HICOM-Gamuda asked to be exempted (Ibid.). The location of the suburb is also made attractive by the nearby opportunity to transfer from Kesas' Shah Alam Expressway to the Damansara Puchong Highway (built and operated by another Gamuda concessionaire) leading to central Kuala Lumpur or the North South Expressway (NSE) Central Link, which was built and is operated by a concessionaire belonging to UMNO-linked Renong. The NSE Central Link expressway leads to Putrajaya/Cyberjaya and further south to the KLIA and the Malaysian Grand Prix race site. Notably, this development will generate private benefits, but public externalities brought about by higher automobile use and social segregation are not taken into account.

## Plate 6.2 The Kota Kemuning Township



Source: Gamuda (2001)

Based on the success of Kota Kemuning Township, which by mid-2001 had grossed total sales of RM1.8 billion and was still only half complete, Gamuda was set to develop “The Valencia”, a 280 hectare development of high-end residential properties adjacent to a golf course and another Gamuda toll expressway concession at Sungei Buloh (*The Star*, 21 May 2001). The new automobile-dependent community was proposed to feature an internal “...streetscape designed to allow space for pedestrian walkways and street parks, safely screened away from moving traffic” (*The Star*, 21 May 2001). Thus, while the relatively wealthy residents will impose automobile related externalities on the wider Kuala Lumpur public, the enclave itself is protected from many of these impacts. The negative impacts of toll expressways and associated land developments emerged as public issues in the 1990s as the number of concessions grew to cover much of the Klang Valley (Figure 6.4).

Figure 6.4 Klang Valley Private Expressway Projects



Source: Malaysian Highways Authority (1999)

#### **6.4.1 Addressing social concerns**

While PM Mahathir had taken increased control over DBKL and the MSC, an increasingly vocal civil society began challenging many actions undertaken by the government in Kuala Lumpur. In some cases, groups were able to organise and exert pressure on local politicians who in turn lobbied the higher level UMNO leadership. Much of this discontent was over the localised impacts of toll expressways on middle class communities. Residents in communities located close to expressways complained about the local environmental impacts of construction and future operations of expressway projects. A frequent source of public controversy in the 1990s was the severance of established communities by expressways, and the tolling of roads that were previously free.

The government was often sensitive to these concerns in middle class neighbourhoods, particularly when they were championed by local politicians. The typical responses, however, did not fundamentally alter the approach of giving private companies the prerogative to build toll expressways which would be supported by local public road improvements and other measures. Nor did they lead to the implementation of transport plans or transport policies to guide where and when and what types of roads were built. The main response was to lower tolls or postpone toll increases, which were mandated in concession agreements. The result was that government compensation was paid to the concessionaires and in some cases the concession periods were extended. In this convoluted situation, the general public through government expenditure paid some of the private costs of constructing and maintaining expressways, which were originally partially justified on the basis that they would not cost the public because motorists would be willing to pay to use them. That the concessionaires have in many cases been linked to PM Mahathir and UMNO figures has been a source of further criticism for increasingly alienated segments of the population.

In the most recent national five-year plan, substantial attention was given to the issue of expressway tolls in Kuala Lumpur. In implicit acknowledgement that there have been shortcomings and public dissatisfaction with expressway construction and operation by private concessionaires, the EPU and the PM through the Eighth Malaysia Plan (2001-2005) have rationalised and defended private expressways. The rationalisation is based on reductionistic, favourable comparisons between Kuala Lumpur's individual toll expressways with individual public roads in Kuala Lumpur and toll expressways in other Asian cities. A study comparing toll rates was carried out by UK consultants who found that Malaysia's rates were lower per kilometre than in all other East and Southeast Asian nations, with the exception of Indonesia (*The Sun*, 30 April, 1999). That "toll rates in Malaysia are the lowest in the world" due to government subsidies (to private companies) was emphasised by PM Mahathir in his speech tabling the Eighth Malaysia Plan (Mahathir, 2001). What is not considered is how much in total motorists pay for the use of expressways. Also, not directly addressed is the question of where the tolls go: in Malaysia these are private profits accruing to private individuals and companies (many of whom are directly and indirectly linked to the *Barisan Nasional* coalition), whereas in some other nations that Malaysia is favourably compared to (e.g. Singapore and Japan), the tolls are used by governments to invest in public facilities and developmental activities. Overall, what this defence of tolls illustrates is Mahathir's unwillingness to consider the views of the public and an unwillingness to re-think or critically evaluate the toll expressway approach to Kuala Lumpur's urban transport development.

A similar lack of reflection is evident in the Mahathir government's response to the very real problem of high traffic accident deaths both in Malaysia in general, and specifically in Kuala Lumpur. While deaths have clearly risen alongside Kuala Lumpur's motorisation, the government's response has not been to evaluate the root causes and solutions to the problem. Instead, amidst public health concerns,

the government has sought to argue that high-speed expressways which segregate traffic by speed and don't permit slow moving, non-motorised transport, will actually increase safety. The Malaysian Highway Authority used 1998 police data to show that fatalities and serious injuries on private expressways were lower than on federal, state, and municipal (i.e. public) roads (Malaysian Highways Authority, 1999). However, what these data don't show is that total transport deaths in Kuala Lumpur are the highest among Asian cities, which suggests that the high level of motor vehicle use is leading to higher fatalities (Table 6.1). While transport deaths in Kuala Lumpur are undoubtedly high due partly to the overall large amount of driving, Kuala Lumpur's level of total transport deaths per vehicle kilometre is also relatively high, with only Jakarta and Mumbai recording worse figures. What is also significant is that public agencies (the police, Malaysian Highways Authority) appear to be providing information in order to support private sector projects rather than addressing public safety and welfare concerns whether "real" or "perceived".

**Table 6.1 Transport fatalities indicators, 1995**

<b>Cities</b>	<b>Total transport deaths per million people (deaths/10<sup>6</sup> persons)</b>	<b>Total transport deaths per billion vehicle kilometres (deaths/10<sup>9</sup> vehicle kms)</b>
<b>Kuala Lumpur</b>	<b>283</b>	<b>61</b>
Jakarta	227	159
Bangkok	192	58
Taipei	184	48
Seoul	170	50
Mumbai	93	157
Manila	80	53
Singapore	79	24
Tokyo	53	17
Hong Kong	38	33
Beijing	38	23

Source: Kenworthy and Laube (2001)

A less well-acknowledged and under-analysed social impact of expressways in Kuala Lumpur has been their effect on the poor. Barter (2002) suggests that Kuala Lumpur's rapid motorisation and decline in public transport have been disproportionately borne by the urban poor. In addition, expressways in Kuala

Lumpur, where it is estimated that a quarter of the population lives in squatter settlements (UNCHS, 1999), have been a major source of evictions of lower income groups. Due to the lack of clear ownership rights and a lack of clarity surrounding the uses of the Land Acquisition Act (1960, revised 1992), which provides strong powers of eminent domain for public purposes, many of the displacements have been undertaken under arduous circumstances in which the threat of violence or physical violence was often deployed. Due to high land prices in the city centre and encouragement of growth at the urban fringe, many of these displacements were to more remote locations, which in turn have necessitated more urban travel.

Ironically, many of the poor households were being evicted for private infrastructure and land development projects which were justified on the basis that they were raising the level of social equity in Malaysia. But while exclusive “lifestyle” townships such as Kota Kemuning sprouted around suburban and exurban Kuala Lumpur, the lack of affordable housing in Kuala Lumpur remained a major issue (Bunnell et al, 2002). Many of the Malays being displaced had migrated to Kuala Lumpur in response to the growing opportunities resulting from the NEP in the 1970s. These migrants lacked access to affordable housing in the formal sector (either government or private-sector provided) and settled in urban village-like communities, or *kampung*, usually located illegally on private or public land. However, while technically illegal, the government turned a blind eye to the existence of illegal settlements housing a low-wage work force filling a range of occupations in the informal and formal sectors, which have expanded along with Malaysia’s urban-centred economic growth and industrialisation. As a result, many of these settlements are located on publicly-owned lands including rail and road rights-of-way. Another source of migrant squatters were former plantations which were home to many ethnic Indians who had historically provided plantation

labour. As many of these lands were bought up by public and private agencies and converted to urban and suburban land uses, these inhabitants were displaced.

### **6.5 Private rail systems**

Throughout the 1980s, and in spite of earlier claims of success by the World Bank and transport economists, the quality of the bus-based public transport system in Kuala Lumpur declined. The vehicles continued to age at a time when economic growth raised social expectations and motor vehicles became more affordable.

Motorcycles also became popular as a way of avoiding growing congestion and uncomfortable conditions on buses. In the mid-1970s mandatory age limits and higher taxes were introduced in order to encourage renewal of the bus fleet.

However, when the measures were scheduled to come into effect at the end of the 1980s, the Operators' Association lobbied the government and the measures were dropped (HSS Integrated Sdn Bhd and MVA Asia Ltd, 1992:1-24). In theory, the development of rail systems would address the decline in public transport use.

Prior to the advent of privatisation in the early 1980s, rail mass transit in Kuala Lumpur had been on the urban transport agenda, but had never progressed beyond an early stage of planning and political support in principle. While government interest had been expressed in rail mass transit for Kuala Lumpur during the NEP decade, a public financial commitment to implementing a system had never emerged. In the late 1970s and early 1980s more detailed planning for rail mass transit was carried out in conjunction with wider transportation master planning and the preparation of a structure plan prepared by the DBKL. The *Kuala Lumpur Structure Plan* (DBKL, 1984) recommended rail systems but recognised that what would be needed for transport improvements serving the public would be a single agency under the ministry of the federal territory with the responsibility for administering, regulating, and planning for public transport in greater Kuala Lumpur. Similarly, a 1991 consultant report prepared for the DBKL on the bus transport system recommended the creation of public transportation

policy which could promote greater use of public transport and integration of modes (Perunding, 1991).

While a public planning agency responsible for coordinating transport (and mitigating the negative impacts of motorisation) was not created, a number of individual, private rail projects progressed. With the advent of the 1980s and privatisation policies, interest in private investment in proposals for Light Rail Transit (LRT) and an unusual “aerobus” project grew. In 1982, a Swiss firm was hired by a government-linked Malaysian company to develop a 5 kilometre cableway, an aerial tram running on cables 20 feet above the central business and shopping district. In 1983 a Transport Planning Committee set up by the Federal Territory Ministry officially approved the overhead cable car system which was to be developed by Swiss companies, and a technical appraisal of an “Aerobus Pilot Line” was produced in the same year (Electrowatt Engineering and Jurutera Konsultant, 1983). A year later the government approved one of two LRT lines, although there was criticism that the aerial system and the LRT lines duplicated some of the same sections (*The Wall Street Journal*, 1984). By 1985, continuing issues with financing the proposals were problematic. Nonetheless, a US \$300 million turnkey proposal to build the first 18 km phase of LRT was submitted by a French/Belgian joint venture to the government company in charge of implementing the total proposed 53 km LRT system (*Engineering News Record*, 1985). By this time alignments and the mix of proposed at-grade and elevated LRT was more clear (Noor et al, 1985). In 1987 an Australian consortium backed by the Australian Trade Commission won the project management contract to build the first stage of a light rail system then referred to as Metrolink, which involved the operator of Melbourne’s extensive tram system. These proposals never made it to implementation, being hampered by the high cost and complexity involved.

The federal government's reluctance or inability to commit to the large capital expenditure for rail mass transit underwent some change in the late 1980s. In 1989, the federal government gave approval to the recently corporatised state railway (KTMB) to undertake a double tracking project in the Klang Valley financed by grants from the federal government to KTMB and loans from Japan's Overseas Economic Cooperation Fund (OECE) and the UK's Overseas Development Authority (ODA). In addition to Japanese and British companies, much of the construction work was carried out by UMNO-linked companies, which also participated with foreign companies in a project to convert two lines of the railway to electrified commuter rail services. Following this work, KTMB in 1995 began operating 153 km of commuter rail serving the Klang Valley. Unlike the proposed new LRT systems, the costs of this project were relatively low because the commuter service used an existing right-of-way for inter-city services and the stations were already in place. This formed a core regional commuter rail service that was rationalised on the basis that it would complement the planned LRTs.

By the time KTM Kommuter was in operation, an initial LRT project was in an advanced stage of construction. Kuala Lumpur's first successfully-implemented LRT project began in 1990, when a UK-German Consortium of Taylor Woodrow International and AEG Rail Systems proposed to develop the first LRT system on a privatised basis. In late 1991, a private company, Sistem Transit Aliran Ringan Sdn Bhd (STAR), was formed in order to promote the construction, ownership, and operations of this project for a renewable 60-year build-operate-own-transfer concession. The project proceeded further than its predecessors due to government guarantees that eliminated the possibility of disastrous financial risk for the concessionaire. The complexity of implementing one of the world's first private rail projects in the late twentieth century became apparent when it took eighteen months to negotiate thirty-two separate legal agreements in order for the project to proceed (Dunstan, 1994). Taylor Woodrow was both an equity

stakeholder in the consortium as well as the lead contractor responsible for design and construction, including all electrical and mechanical work covering supply, installation and testing of trains, power supply, signaling and telecommunications. Taylor Woodrow was also contracted to earn a management fee on the entire project which eventually cost RM 3.5 billion.

As construction on the first 12 kilometre phase progressed, STAR negotiated to build a second, 15 kilometre route to the proposed site of the 1998 Commonwealth Games. The deal led Taylor Woodrow to inject about \$38 million in equity into the project. Corresponding with previous plans, costs of construction of the STAR-LRT were kept low by utilising unused rail rights of way; however, while keeping the costs low, this also decreased the potential catchment areas of the system. In addition, informal squatter settlements had been built along the right-of-way and these homes reduced access at certain stations. The project necessitated some evictions of squatters which were resettled to low rise “longhouses” at the concessionaire’s expense.

As the STAR system progressed, it grew increasingly apparent that in order to maximise the public benefits of the LRT under construction, as well as other planned LRT lines and a planned inner city Personal Rapid Transit or monorail project, a greater level of public coordination and planning would be required. In a consultant’s report on the overall public transport system, it was observed that:

There is no single agency with a clear responsibility or capability to plan and implement public transport improvements in the Klang Valley conurbation, though the nucleus of such an agency may exist in the Urban Transportation Division of Kuala Lumpur City Hall (KLCH) and also in the Klang Valley Planning Secretariat (KVPS) ... If the full potential of these systems [KTM, LRT, PRT] is to be realised, they will need to be integrated with each other and with the bus and minibus system. For integration to occur successfully, there needs to be a strong central planning agency covering the whole Klang Valley conurbation (HSS Integrated Sdn Bhd and MVA Asia Ltd, 1992:1-4).

While an integration strategy was not implemented, some actions were taken as the first LRT system was to begin operations. As STAR LRT phase one began operations in 1996 (Plate 6.3), the minibuses were being phased out, as the Commercial Vehicle Licensing Board was directed to stop renewing minibus permits (*Sun Magazine*, 11 April 1996). By mid-1998, they were completely gone. The phasing out of the minibuses could be interpreted as the end of an era and the declining political clout of small scale Malay entrepreneurs in favour of large corporate enterprises. The stage bus operators were consolidated into two companies, one of which is owned by conglomerate Renong. However, the larger buses were competing with the LRT rather than serving it, and soon STAR began running its own feeder services, at a financial loss. Also at that time, JICA undertook a major two year study on "Integrated Urban Strategies for Environmental Improvement in Kuala Lumpur" and formulated a master plan for Kuala Lumpur's transportation system. Based on the Master Plan, a "Pedestrian Friendly City Project in Kuala Lumpur" was launched and proposed a transition from automobile transport to public transport by achieving a pedestrian friendly city (<http://www.jica.go.jp/english/news/2000/>, accessed 18 February 2003). These studies were intended to address the precipitous decline in public transport patronage between 1985 and 1997.<sup>44</sup>

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<sup>44</sup> Virtually identical studies were carried out for Bangkok at the same time.

### Plate 6.3 STAR LRT System I



Source: <http://www.railway-technology.com>, Accessed 18 February 2003

In 1994, a second LRT project was initiated by a private company formed by Renong. While the STAR consortium had the substantial participation of foreign companies with interests in building, equipping, and managing the system, Projek Usahasama Transit Ringan Automatik (PUTRA) was officially executed by a wholly-owned subsidiary of Renong. The company did not have the expertise or technology to build a rail system, so it entered into a turn-key arrangement with Canada's Bombardier which provided the expertise and equipped the system which was turned over to PUTRA to run. PUTRA was less constrained by considerations of land expropriation because it was elevated and underground (for a 4.4 kilometre section in the central city) for most of its route, although construction cost more as a result. The 30 kilometre fully-automated PUTRA system linked up the KLCC in central Kuala Lumpur with suburban areas (Plate 6.4). Like STAR, it responded to a lack of coordination with the two major public bus operators (although one was owned by Renong) and operated feeder bus services within a 3 kilometre radius of each station. By 1999, the KTM Komuter trains, STAR, and PUTRA were all in operation, but early ridership on all three systems was far lower than projected.

## Plate 6.4 PUTRA LRT System II



Source: <http://www.railway-technology.com>, Accessed 18 February 2003

A major problem was the lack of integration between the systems. As commercial, profit-making enterprises and as components of a public transport system which met social demands and served as an attractive alternative to private motor vehicles, the LRTs fell short of expectations. The most visible sign of the lack of physical and fare integration between the two systems is in the centre of Kuala Lumpur at Masjid Jamek station. Two stations were built side-by-side, but to transfer between the lines one must leave one station and in some cases cross a road in order to reach the other station where one must also purchase a new fare. It would clearly be more convenient for passengers and would attract more passengers, had the two systems utilised one station. However, due to the lack of an authority or agency to take on this task, it was not done. The DBKL then began studying how it could demolish and then re-build the two stations. However, the Eighth Malaysia Plan produced by the EPU under the direction of PM Mahathir remained oblivious to the concept of public coordination and integration, and remained primarily concerned with making concession deals for infrastructure construction. According to the EPU, the lower than projected ridership should be addressed by the companies through promotional, marketing efforts by the private operators (Malaysia, 2001).

Another problem that was to face the LRT operations before they were even opened was the increasing network of expressways, which in some cases were being planned and built in alignments serving the same suburban housing areas. In 2000, a number of new residential areas were completed adjacent to a STAR line, but due to the lack of public guidelines and regulations over development, they were well connected to local roads and the expressway network, but access to the LRT station was difficult without a car.

Where the possibility of some form of integration by a private infrastructure project was possible, some action was taken. This occurred with the 2001 opening of a new central rail station where all of the systems (with the exclusion of STAR)<sup>45</sup> come together under one roof on the outskirts of central Kuala Lumpur (Figure 6.5). The Sentral Station project was awarded in 1994 as a concession to a consortium led by the Malaysian Resources Corporation Berhad and including the Malaysian national railway (KTM). The new central railway station was built with the involvement of KTMB, the national railway, which as of 1997 was joined in a management partnering as a transition stage between corporatisation and privatisation, and which was partially owned by HICOM and Renong. In exchange for building the station, the consortium was given rights to commercially develop 72 acres (29 ha) of formerly public lands owned by the railway surrounding the complex. Renong's 2001 annual report attributed a 14% boost in PUTRA ridership to the opening of the Sentral station.

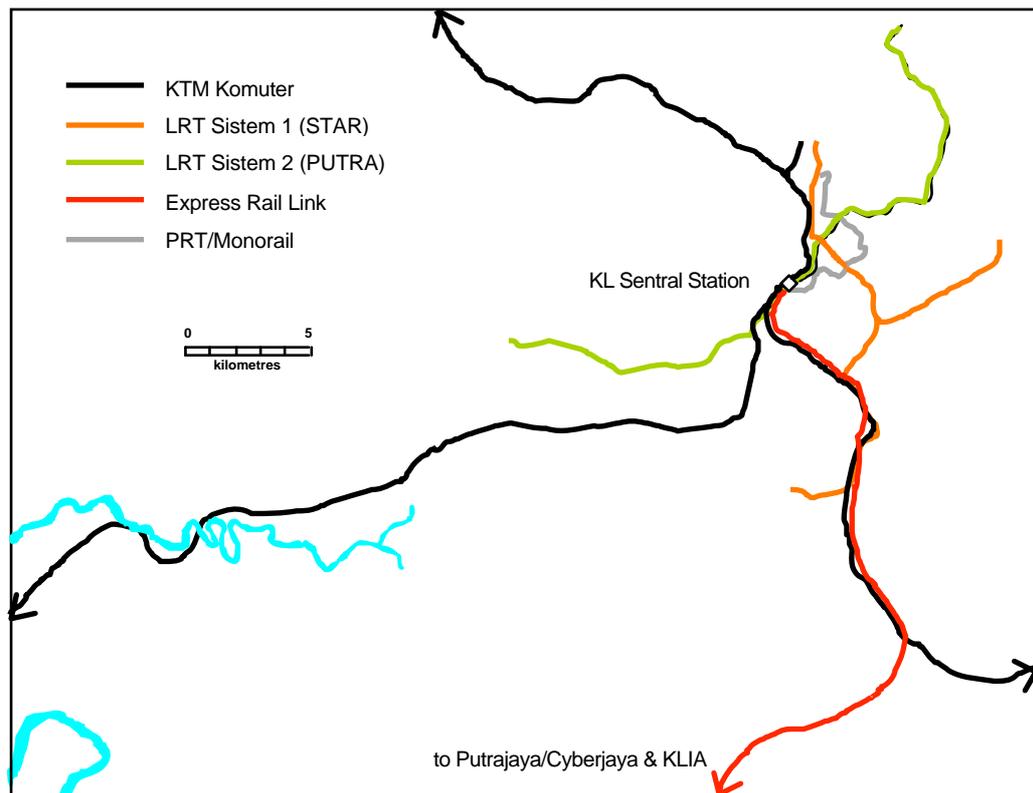
The station also serves as a key link in the MSC, by serving as the central terminal for a new high speed rail project linking central Kuala Lumpur to the KLIA. In

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<sup>45</sup> Sometime in 2003 or 2004 a 9 kilometre monorail project will also join at Sentral Station. This project evolved out of the original proposal for mass transit in central Kuala Lumpur in the 1980s. It began as a turnkey concession contract with Hitachi of Japan, but in the wake of the financial crisis and a liquidity crisis the project was given government assistance and "nationalized" to a Malaysian company run by Vincent Tan, a Chinese Malaysian tycoon with close links to Mahathir.

1997 the Malaysian government awarded a 30 year concession to a private company, Express Rail Link Sdn. Bhd, to plan, build, and operate a fast rail link between the new Kuala Lumpur International Airport and central Kuala Lumpur. The project was built in a turnkey arrangement by Siemens of Germany and handed over to the Malaysian operating company in 2002. The rail line is 57 kilometres and links with a terminal where airline passengers can check in their bags at Kuala Lumpur's Central Station. As in the Projek Usahasama Transit Ringan Automatik (PUTRA) concession, the building and equipping of the system was carried out by a foreign partner, which turned over the project to the Malaysian concessionaire once it was built.

**Figure 6.5 Kuala Lumpur rail mass transit, 2005**



The 1997-8 financial crisis also led to changes to the management of the LRT systems, and increased the possibility for greater integration of STAR and PUTRA in the future. In a scramble to devise measures to save strategic economic

sectors and the conglomerates by domestic initiatives, the state established three institutions to deal with the financial system (Khoo, 2001). One of these was the Corporate Debt Restructuring Committee (CDRC) which managed debt restructuring of Malaysian companies. One of the CDRC's most publicised and controversial applications came from UMNO-affiliated Renong, which through its subsidiaries owned the concessions for the NSE, PUTRA, and a number of expressway concessions in greater Kuala Lumpur.

While the political leadership had not shown interest in integrating public transport prior to the crisis, in late 2000 PM Mahathir announced that the government would buy out the two LRT systems, "in order to integrate the systems" and improve public transportation. The complicated process of issuing bonds and negotiations between debtors and creditors took longer than expected. The LRT concessionaires were given 5.6 billion RM in late 2001, and the government then leased the operations back to the two firms. However, as of late 2002 when the buy out was completed there had yet been no major changes to operations.<sup>46</sup> This led some government critics to point out that the rationalisation of integration and better public transport was being used to obscure a massive buyout of an UMNO-linked company. Notably, while the buyout sum was announced as an aggregate amount, most of the funds went to UMNO-linked Renong's PUTRA. The difficulties of PUTRA appear to have been exacerbated by conflicting objectives stemming from the lack of a public framework: while designed to be profit-making private mass transit, fares were lowered by the UMNO-linked company at the government's urging for the system to act as a social service.

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<sup>46</sup> The Managing Director of PUTRA, who had began as a politician in Penang before becoming involved with infrastructure projects was appointed CEO of the new company called Syarikat Prasarana Negara Berhad.

The fundamental problem facing the infrastructure concessionaires (both the expressways and the rail systems) was the large debts incurred to construct the systems. They are also hampered by the lack of physical and fare integration with each other. Essentially, the LRTs are competing with buses and with each other for a declining market of public transport passengers. There is little integration of land use with the rail systems, which in some cases pass by housing estates already developed or under development but these developments are completely oriented toward automobile transport, without which the station couldn't be physically accessed.

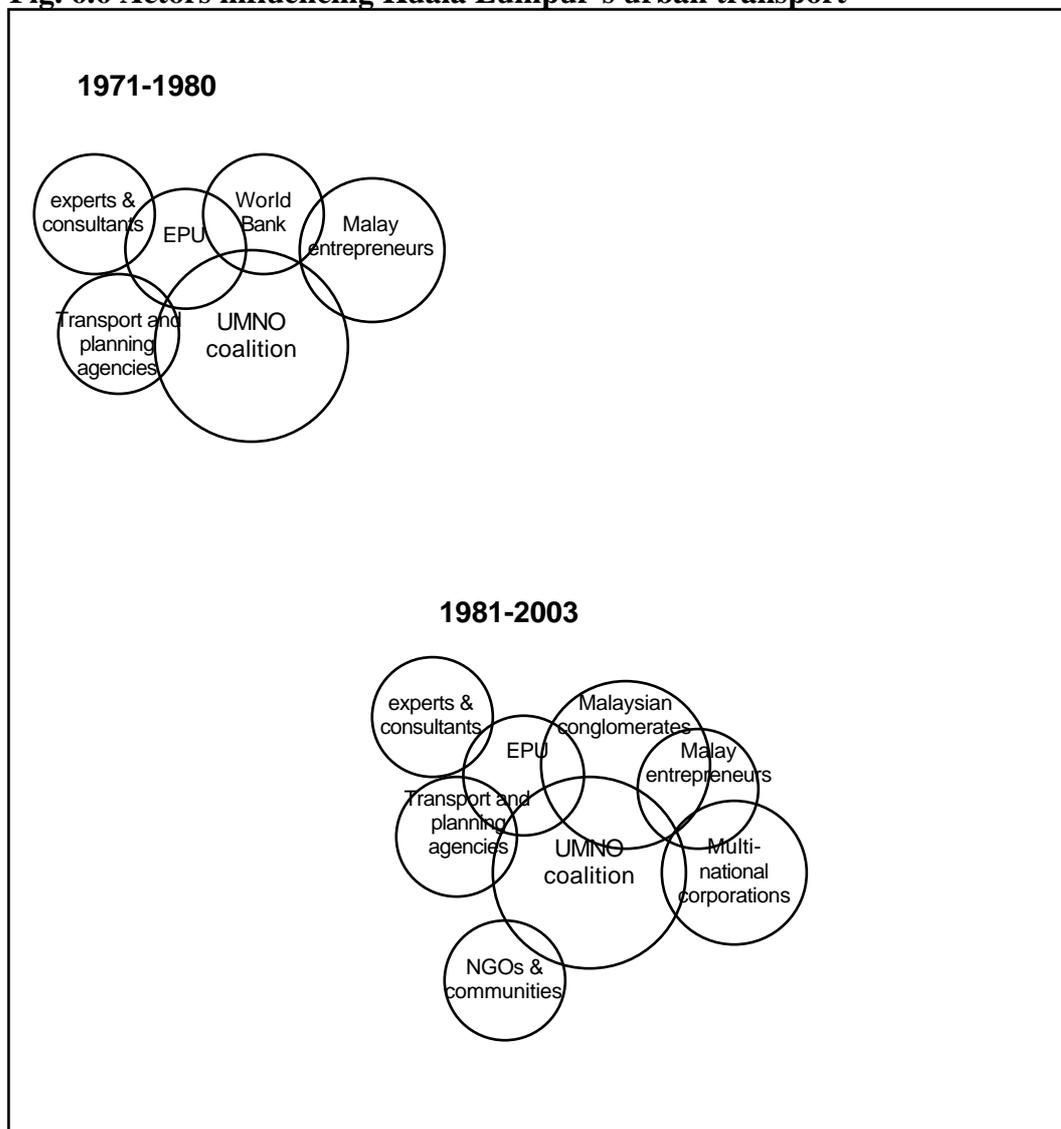
The Eighth National Development plan for 2001-2005 has reiterated the government's commitment to privatisation on the basis that it has increased efficiency and productivity, benefited the public, and spurred economic growth. In addition, its contribution to enhancing *bumiputra* participation in business and commerce is cited (Malaysia, 2001). Specifically, it was argued that the construction of highways was faster (speed taken as a measure of efficiency and productivity) than would have otherwise been the case (Malaysia, 2001). Notable by its absence is a lack of consideration of public costs or externalities or concerns for goals such as livability and quality of life.

## **6.6 Conclusions**

Changes to urban transport in Kuala Lumpur have been influenced by sets of actors associated with distinct leadership regimes. In the early years following national independence, the main powerful actors in Malaysian society remained much the same as in the colonial period. However, in the wake of domestic instability and inter-ethnic violence, a new set of actors and relationships was put into place in 1971 by the leadership of the ruling coalition government, which was led by UMNO. It was at this point that Kuala Lumpur began growing more rapidly and serious urban transport problems emerged. This set of actors (1971-

1980 in Figure 6.6) centred around the UMNO leadership which gave preferential treatment to Malay-owned companies as a means of redressing inter-ethnic economic imbalances. At this time, in the 1970s, the World Bank was a significant external participant in many aspects of Kuala Lumpur's development, including urban transport. The World Bank's interest in encouraging "low-cost" bus-based urban public transport combined with the Malaysian government's preferential treatment of Malay small-scale enterprises. One aspect was an emphasis on road building, while another was on establishing competitive minibus operations.

**Fig. 6.6 Actors influencing Kuala Lumpur's urban transport**



A major shift in the composition of actors and processes occurred when the leadership passed to Mahathir Mohammed in 1981. Whereas in the 1970s preferential treatment had been given to small-scale Malay entrepreneurs, under the new UMNO regime's heavy industrialisation drive industrial conglomerates controlled by Malays were promoted. These conglomerates which were closely linked to UMNO and PM Mahathir (at one early stage, there was clear evidence of ownership of UMNO in a holding company) were given concessions to build and operate urban transport infrastructure for profits. However, state actors lacked independence from corporate imperatives and there was not coherent urban transport policy other than the promotion of profits for particular conglomerates. Public transport suffered proportionately more than private transport. Through building feeder routes, "traffic dispersal schemes", ring roads, interchanges, by-passes, and radial roads, support was provided to the toll expressways, while government fuel subsidies and the production of low cost motor vehicles.

The incompatibility of the goals of these corporate enterprises (e.g. furthering societal economic equity between ethnic groups while at the same time increasing profits) led to problems. While providing some coordination to achieve particular goals (e.g. land development in conjunction with expressways). Nonetheless, this recent set of actors has proved highly durable, and will likely extend well beyond the retirement of PM Mahathir in 2003.

That many if not all of the private companies involved had direct and indirect links to political parties in the ruling coalition became a source of public dissatisfaction with Kuala Lumpur's urban transport. In the 1990s an increasingly vocal civil society began playing an increasing role, primarily in resisting or protesting state plans and policies promoting large scale physical infrastructure projects.



## **SINGAPORE: SPEED, SUCCESS AND CONTROL IN THE PAP-STATE**

### **7.1 Introduction**

Since Singapore's independence from British colonial rule, a number of highly unique actions have shaped the form and function of the Southeast Asian city-state's urban transport system. In most cities, collective actions involve the state, the private sector, and civil society to varying extents. In most of Southeast Asia's market and emerging market economies, all three of these social sectors played significant roles in shaping urbanisation processes and outcomes. However, in the case of Singapore, virtually all collective actions were undertaken by the state, which has been controlled by one political party since independence. To a certain extent, this made the task of identifying actors and actions relatively straightforward. There was little open conflict: the government agencies, statutory boards, government-linked companies, and state enterprises which were all directly or indirectly under the control of one political party carried out a coordinated and ordered set of actions. Together, these actions were directed as part of a highly planned, technically sophisticated, and integrated strategy.

This chapter identifies and describes four broad categories of actions shaping the daily movements of people in the city-state of Singapore. The first section of this chapter describes the process by which the government, beginning in the 1960s, came to control the use of land to support public housing and industry. The spatial distribution of activities that emerged as a result of this process created some problems such as the need to travel longer distances between home and work. It also created opportunities for the movement of people by relatively efficient, mass modes of transport. The second section describes the process of selecting and building an initial rail mass transit system, which soon after commencing operations was considered a success because of high levels of use and integration with housing. The success of the Mass Rapid Transit (MRT) system was shaped not only by its integration with land uses, but also by a number of measures which

made ownership and use of motor vehicles extremely expensive. These measures were key, because extensive road-building was taking place before and after the MRT began initial operations. The third section describes the government's actions which have sought to restrain motor vehicle use and ownership: it is these measures which explain much of the idiosyncrasies of Singapore's urban transport system. However, the denial of car ownership to citizens who could afford it in virtually any other city in the world has caused some discontent, and a carefully-managed and more sophisticated strategy to build a "world class land transport system" was initiated in the 1990s. The fourth and final section describes the strategy and actions surrounding it.

## **7.2 Land use: public housing and industry**

During British rule, a pronounced problem facing Singaporeans was poor quality and inadequate housing: much of the population lived as "squatters" lacking formal land or housing tenure. The problem was well-recognised and an agency responsible for urban improvement, the Singapore Improvement Trust (SIT), built approximately 23,000 units of public flats between 1927 and 1959 (Savage and Poh, 2002). Overall, the SIT's progress was slow as a result of the reluctance of squatters to be resettled and the colonial administration's lack of legal powers to evict them (Quah, 1985). In the early 1950s, the SIT undertook the preparation of a plan for the coordination of private and public land development. The resulting 1955 Master Plan drew on concepts from British town and country planning and recommended containment of the built-up area by a green belt, the expansion of existing villages and rural centres away from the high-density urban core and the construction of new towns to accommodate new growth (Planning Department, 1980). While selected ideas in the plan were to be employed in the future, it was generally looked on unfavourably by the emerging anti-colonial Singapore leaders who saw it as part of the colonial approach to administration. Nonetheless, the problems it sought to address and the fundamental solutions share much in common with the post-independence programmes.

Widespread dissatisfaction with housing was capitalised on by the anti-colonial leaders of Singapore's People's Action Party (PAP) who during the campaign for independence frequently asserted that they would be "vigorous in promoting housing and industry". Following independence, in its opening message to the Legislative Assembly in 1959, the party committed to an extensive public housing programme (Dale, 1999). A statutory board, the Housing Development Board (HDB), established under the direct control of the Minister for National Development, served in the implementation of the ambitious public housing programme. While the local independence leaders had criticised the colonial 1955 Master Plan, some of the ideas from this plan were used to shape the overall post-independence land use planning and in particular the HDB's public housing programme.

Singapore's emergent post-colonial urban planning and management were supported not just by new institutions such as the HDB, but also by the lack of organised class interests and by a relatively high autonomy of state (Chua, 1996). Within a few weeks of taking office, the PAP government abolished the city council and its elected mayor of two years, effectively merging local and central authority (Dale, 1999), and eliminating the planning distinction between city and non-city (Chua, 1996). From this point on, Singapore has been governed as a single, unified entity by one tier of government (Chua, 1996). The autonomy of the government from organised class interests was furthered in 1962 when a faction of Chinese-educated, left-wing trade unionists left the PAP coalition to form the *Barisan Sosialis* party, due to disagreements with a faction of English-educated professionals on the issue of a merger with Malaysia (Chua, 1999). In 1961 the right wing Prime Minister of Malaya, Tunku Abdul Rahman, suggested that Malaya, Singapore, and the British territories in Borneo join together.

During a referendum over the merger which the PAP supported, the leaders of the opposition were detained without trial by a joint Internal Security Committee. Subsequently, in the 1963 general election the PAP, under the English-educated conservative faction led by Lee Kuan Yew, won a parliamentary majority.

Singapore became a state in the Federation of Malaysia from 1963, but it was short-lived. Between 1963 and 1965, political differences and mistrust between the Kuala Lumpur and Singapore governments escalated. Evers and Korff (2000) argue that Singapore's position in Malaya was problematic for the ethnic Malay government of a territorial state in which Malays formed the largest ethnic group. With Singapore forming part of Malaya, the population of ethnic Chinese within the larger Federation was larger than Malays, and the multi-ethnic city dominated by ethnic Chinese was the Federation's largest and most important, which many expected to be the economic and potentially the administrative centre of Malaysia (Evers and Korff, 2000). In 1965, Singapore was expelled from the Federation and emerged as a sovereign city-state led by the PAP, which gained an absolute parliamentary majority in 1968 when the opposition *Barisan Sosialis* boycotted elections.

The lack of an extensive rural hinterland constrained the range of options for urbanisation and industrialisation, but also provided some opportunities. Separation from Malaya and global economic conditions fostered a change in the industrialisation strategy from import-substitution industrialisation to export-oriented industrialisation and an increase in state participation in the economy (Rodan, 1989). The separation from its hinterland and internal conditions led to a strategy of increasing government activity in economic development and industrialisation, through statutory boards and government-linked companies, and through the creation of a favourable climate for foreign direct investment (Ng, 1999). There was no substantial local business class to oppose measures, and multi-national corporations were targeted as a source of investment.

Many of the government's actions to shape Singapore's economy and urbanisation in the early years were supported by foreign advisors. The United Nations, on request of Singapore's PAP government, provided technical and financial assistance in planning for the city-state's future and in particular, for the housing programme, city planning, and industrialisation. During 1962-63, three

housing and planning experts<sup>47</sup> serving as UN advisers undertook a mission to Singapore and surveyed and offered recommendations. The UN had been requested by the Singapore government for a plan that was “more flexible and suited to fast growth and change”, to replace the 1955 Master Plan (Abrams et al, 1980:86). The advisors argued for “urban renewal” similar to that in the USA where the government of the time was concerned with clearing slums, freeing traffic flow, and making land available for business and growth (Abrams et al, 1980). However, the advisors argued that the overseas experience could not be transferred directly due to Singapore’s island geography and thriving central districts of the city. Furthermore, they cautioned against “wholesale demolition of large quarters” in order “to minimise the social upheaval and the suffering that would result from the dislocation of large numbers of people and business undertakings” (Abrams et al, 1980:92). Subsequently, Singapore government officials were trained in city planning by the UN and a provisional planning authority was established.

Partially shaped by the 1955 Master Plan and the 1963 UN recommendations, in the 1960s the HDB began building public housing estates or “new towns” on the fringe of the central urban area. By the 1970s, as the population continued to grow, the locations of these developments shifted further into outlying areas (Phang, 1997). The spatial distribution of these developments corresponded only very loosely with the 1963 proposals (Figure 7.1), and corresponded more closely with planning concepts enshrined in a 1971 Concept Plan (Figure 7.2). In 1964 the government began promoting ownership of HDB flats which were being produced at a rapid pace. The speedy implementation of the state housing programme was facilitated by the 1966 promulgation of the Land Acquisition Act which enabled the government to acquire land compulsorily from private landowners for the purpose of public development. The acquisition of land was

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<sup>47</sup> One of the experts was American Charles Abrams, who in the 1930s became the leading US legal expert on public housing and using eminent domain for slum clearance. He helped create the New York City Housing Authority, was a staunch defender of civil rights, and campaigned against a private “new town” promoted by Robert Moses over the issue of public versus private uses of eminent domain. He was also in favour of in situ slum improvement rather than wholesale demolition (Pugh, 2000).

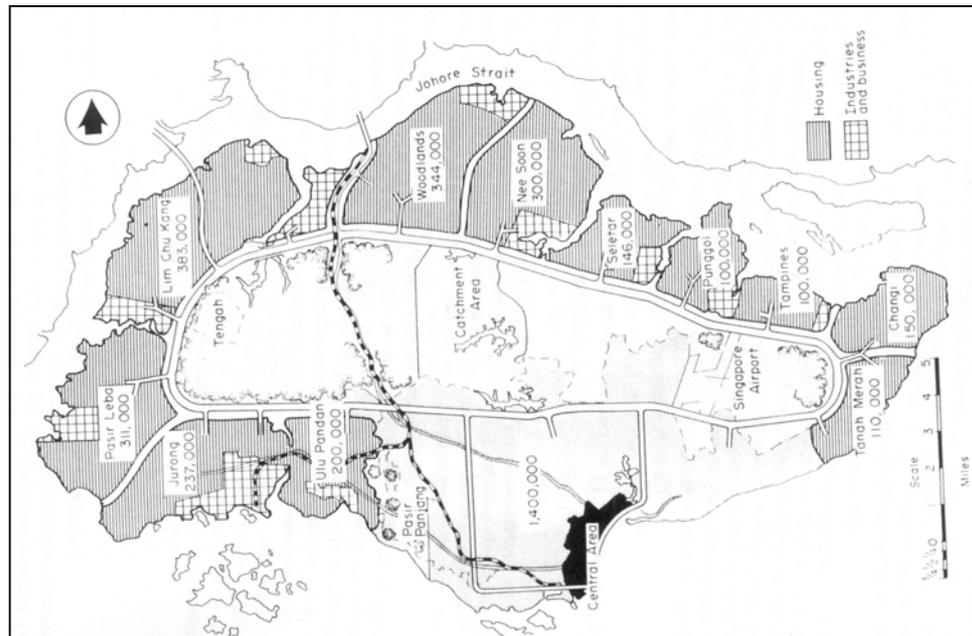
placed under the control of the Minister of National Development, and it was established that there “is very little, if any, scope for challenging land acquisition ..., unlike the position in many other countries” due to the lack of “any proper safeguard in the Constitution relating to fundamental rights in property and the wide scope of the powers contained” in the act itself (Khublall and Yuen, 1991:193-4). The heavy handedness of the 1966 Act was criticised soon after its passage:

...the need of the State for ample legal power to acquire land compulsorily is both necessary and legitimate. It is however submitted that the Government has erred in bestowing upon itself powers which are excessively wide. They exceed what are necessary to accomplish the legitimate objectives of the State. They have created suspicion and fear in the minds of citizens towards the Government. It seems to us that Governments as well as individuals should aspire to the virtues of self-restraint and moderation. This is particularly important where the Government controls all the seats in Parliament and where the competence of Parliament is unfettered by the Constitution (Koh, 1967:xxii).

One source of early (and ongoing) dissatisfaction with the Act was that land prices were fixed, first on 1973 values and then revised in 1985, in such a way that the government paid far less than what could have been obtained by the land owners selling privately in a more open market. Overall, the provisions draw attention to the lack of a traditional land-owning elite, such as is found in most of the other Southeast Asian capitals where royalty, aristocracy, and large militaries all make claims on the physical territory and use of land for individual profit.

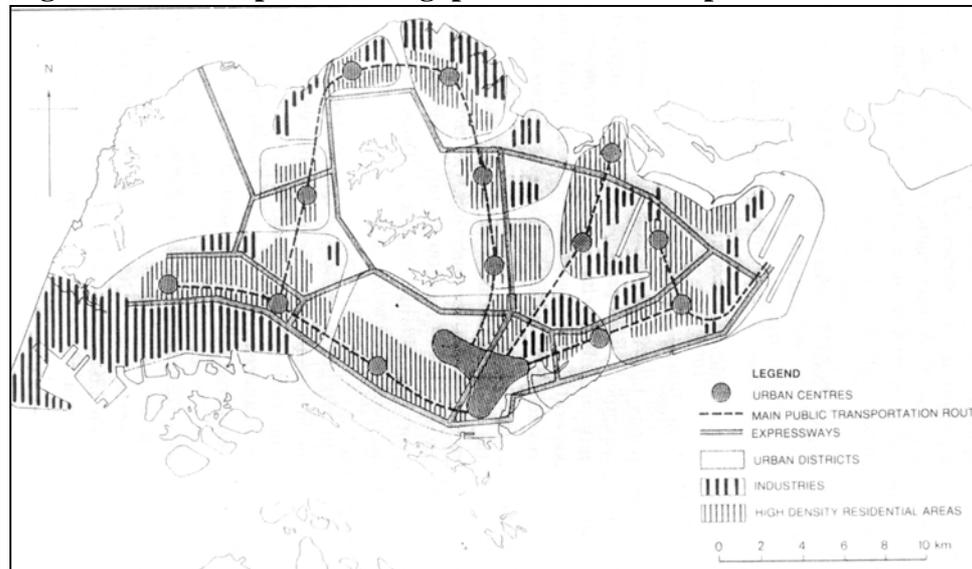
It was the government’s ability to acquire land on its own terms and conditions and to provide this land to the HDB that formed the basis of Singapore’s success in housing, which was not replicable elsewhere in Asia at the time (Lim, 1983). In addition, the ability to restrict population inflow and the lack of a rural peasantry provided fixed limits to how much housing would have to be provided.

**Figure 7.1 The 1963 “Ring City” Plan for 4 million**



Source: Abrams et al (1980)

**Figure 7.2 1985 Update to Singapore’s 1971 Concept Plan**



Source: Revised Master Plan (1985)

The rapid development of non-urban land for housing and industry, facilitated by the Land Acquisition Act, was to have major implications for urban transport. The location and physical form of the housing estates created new origins and

destinations and a new set of opportunities and constraints for transport infrastructure and services. All of the housing took the form of modernist blocks of high rises in suburban settings removed from the central city where people previously lived in high-density, low-rise and mixed use areas. These formerly mixed use central areas became the sites for office towers while zones of manufacturing industry separated from homes were created by another statutory board, the Jurong Town Corporation. In effect, the government decanted population from the central area into suburban, high-density, high-rise housing blocks with minimal mixing of land uses and complete separation of modes of transport.

The architectural and planning principles utilised were clearly based on the ideas of Le Corbusier and other modernists. Lim (1998) argued that the approach to the architecture of the public housing had been based on the fundamental principles of modernism: pragmatism, functionalism, cost control, rapid construction, and technocratic management. Similarly, a modernist architectural idiom known as the International Style which has been described as “a tool of American capitalism” was deployed in the design of Singapore’s new CBD:

The Singapore authorities accepted and implemented the urban design and planning theories of Modernism wholeheartedly, with surprisingly few aesthetic modifications. It is in this context that we have to understand the extent of disconnection in the architecture of Singapore today. Like the International Style, there is no context, no landscape, no scale, and no history – or at least, nothing to speak of – as major references (Lim, 1998:172).

Plans embodying these principles were drawn up and implemented to varying degrees for growing cities around the world. However, it could be argued that Singapore is the closest living example of the “contemporary city” (of 3 million population) envisioned by Le Corbusier. He participated in the design of Chandigarh, India, but the persistence of informal settlements and a lack of the orthogonal order that he prescribed serve to distinguish the actual city from Le Corbusier’s vision (Plate 7.1). In Singapore, much of Le Corbusier’s high modernist vision was realised (Plate 7.2). While Le Corbusier severely underestimated the problems associated with the private automobile in the city, in

Singapore these problems were largely resolved through measures discussed later in this chapter.

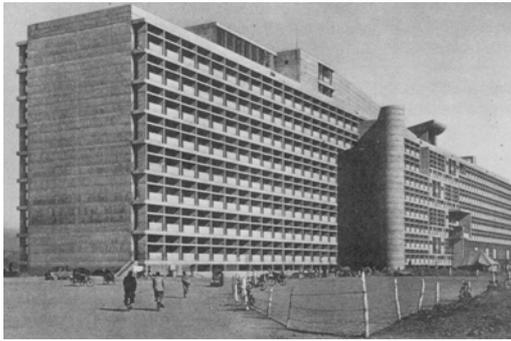
A large part of the modernist vision of efficient and functional cities was the need for a technocracy free of politics. The actual form of the PAP regime governance in Singapore closely resembles the kind of autocratic leadership that the prescient Le Corbusier viewed as necessary in achieving his vision of progress and modernity. Like Le Corbusier, the PAP leadership argued in instrumental terms that high-rise housing in “new towns” or estates away from the congested central city was the most efficient means of housing people. According to a former Minister of National Development, high-rise, high-density housing was cheaper for the government to provide and required little land (Teh, 1984). Conversely, low-rise, low-density housing while more favourable and better for raising families, cost more, particularly in terms of infrastructure (Teh, 1984). Thus, according to the Minister, the government had little choice:

As a small country with limited land, Singapore is automatically excluded from any debate on the merits and demerits of high-rise versus low-rise housing. In Singapore, the choice is between high-rise, high-density housing or no housing at all (Teh, 1984:2).

The rationalisation of the Minister in 1984 was supported by a raft of academic work, produced mostly in Singapore. For example, Quah (1985) argued that a shortage of land, and environmental factors influenced changes that took place:

...Singapore's favourable climate and topography allow the construction of such flats as such natural calamities as typhoons, hurricanes and earthquakes do not occur. Several advantages arise from Singapore's smallness, namely, greater coordination and control over administration, a higher level of governmental responsiveness, and fewer communication problems (Quah, 1985:236).

**Plate 7.1 Le Corbusier's buildings at Chandigarh**



Source: Jencks (1973)

**Plate 7.2 HDB's Bedok New Town**



Source: Liu (1984)

However, this form of housing was not necessarily supported by the views of foreign expert advisors, and the recommendations of the 1963 report which had emphasised *in situ* slum improvement. While the modernist view of high rise buildings as preferable and efficient predominated among many governments, planners, and technocrats in the 1950s and 1960s, there were other views at that time and other types of programmes were to emerge in other places. The World Bank, which concurred with the Singapore government on a range of issues, in the 1970s and 1980s, supported the Kampung Improvement Project (KIP) in Jakarta. The kampung is the sphere of a locally-organised informal sector and of subsistence production (Evers and Korff, 2000), and the underlying idea of the KIP was that incremental improvements to infrastructure facilities can upgrade quality of life, even in apparently “squalid” neighbourhoods, without disrupting established communities and without incurring large expenses. Similarly, the 1963 UN team which espoused many modernist ideas about city building had argued for the retention of Singapore’s shop houses, the minimisation of community disruption and the avoidance of wholesale destruction (Abrams et al, 1980). Many of these alternatives emerged in the 1960s and 1970s in Western nations where there were backlashes against modernist architecture and planning (e.g. Jacobs’ 1961 attack on modernist city planning and Le Corbusier’s ideas; see Chapter 2 of this dissertation). Just as the HDB programme of high-rise public housing was accelerating in 1965, “urban renewal” high-rise public housing projects in the USA were falling out of favour and in the spectacular case of St. Louis’ Pruitt-Igoe Homes, was dynamited (Fishman, 1977).

The idea that Singapore’s public housing could have taken a different physical form was underlined in the early 1990s amid some dissatisfaction in the HDB about the existing programme. In 1993, a foreign architect, Moshie Safdie, hired by the Singapore government, created an alternative design for the proposed Simpang New Town<sup>48</sup> which utilised a different massing of buildings, on a more

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<sup>48</sup> This new town was planned for a site facing the Johor Strait and Malaysia. The architect, Moishe Safdie, who came up with this alternative design on the request of some HDB planners unhappy with the monotony and utilitarianism of HDB designs, has designed projects built in Canada and Israel.

organic scale, which were able to accommodate the same number of residents.

According to the architect who presented his model at the HDB conference room, his findings were treated with surprise:

The official plan sat in model form on an enormous table next to ours, presenting a relentless and uninterrupted assemblage of tall buildings. Looking at it, the density was overwhelming. Our alternative concept, with its linear park and vast areas of low-rise buildings, created an openness that completely transformed the town's sense of space. There was a sense of disbelief as officials came into the room, convinced that we had changed the rules of the game, that we had reduced the density they had considered sacrosanct. And so, as ten young architects from the Housing Board's staff were called in, our tabulations of the density and number of housing units for our scheme were put away. Three days of analysis of each and every building, in minute detail, finally produced a new set of density calculations ... and the numbers were identical (Safdie and Kohn, 1997).

The rigidity and zeal with which the HDB has built high rise blocks suggests that there were other imperatives shaping the form of Singapore's public housing. This is emphasised by the fact that in spite of alternative proposals and the production of privately-produced low-rise housing ("executive condos") in Singapore throughout the 1990s, the HDB has continued with high-rise blocks in green field locations. The question why has been addressed by a number of more critical accounts of Singapore's public housing programme which emerged in the 1990s to challenge the official view that a small land area determined the form of housing. While acknowledging that HDB housing filled a social need and was popular with the masses, they argue that the way in which this need has been filled has not been as popular as suggested by PAP leaders, and has served as a tool for coercing people into supporting an authoritarian regime which lacks the legitimacy bestowed by practices such as free and fair elections.

Castells et al (1990) acknowledged that spatial size was an important constraint that reduced alternatives, but showed that all of the public housing estates still

occupied less than 5% of the surface of the island.<sup>49</sup> They argued that in order to explain the form of public housing and new towns, one had to understand the characteristics of the Singapore state and the PAP leaders, who believed that society could be remodeled through the intervention of the state to achieve higher standards of living and better forms of social relationships (Castells et al, 1990). This perspective shared much in common with the modernist utopian thought of Le Corbusier and his contemporaries, who argued that professional autocrats would be able to (and should) mold society.

Some other works have looked at the role of public housing in building legitimacy for the PAP, which has remained in power with virtually no opposing political parties for all of Singapore's statehood. While this is generally agreed upon, a number of accounts of how the PAP has shaped public housing take contrasting approaches. Quah (1985), in addition to emphasising topography and climate in determining the shape of Singapore's public housing, argued that there was a political imperative of enhancing PAP legitimacy through public housing. Similarly, Chua (1997) has shown that the PAP government used the provision of housing as an early way to build legitimacy among the middle and working classes previously living in high-density inner city areas which lacked public infrastructure and amenities.

Tremewan (1994) argued that the public housing programme was one means by which the PAP imposed state social organisations centred around PAP figures in order to replace opposition leaders and grassroots groups. In particular, he argued, a policy of limiting the number of any "race" in each housing project served to break up non-Chinese ethnic communities which when organised presented a threat to the PAP's rule. A bloc vote by ethnic Malays against the PAP would have exposed what Tremewan describes as the "institutional racism of the essentially Chinese PAP-state" (1994:62). According to Tremewan, the rationale

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<sup>49</sup> Not mentioned by Castells et al, but worth mentioning here, is that a larger population is actively encouraged by the Singapore government: presumably if scarcity of space was the one factor determining the built environment and the government has control of the border, then they would limit population.

for social control has been to maintain the PAP's political supremacy and the development of a capitalist economy:

The main political effect of the housing policy was the production of a working class dependent on the PAP-state for housing and dependent on wage labour to pay for it. The former was achieved through the physical destruction of all other forms of cheap housing and through forced resettlement. The latter was achieved through the elimination or restriction of traditional means of subsistence and the imposition of a comparatively high HDB rental (Tremewan, 1994:49).

Increased academic scrutiny has also been directed to the political uses of HDB housing during national elections. While these elections are not as "free and fair" as those under democratic regimes, they are nonetheless the only genuine form of political contest in Singapore. In general terms, the provision of public housing has been held up as a major reason for voting for the PAP, which managed to win all seats and hold an absolute parliamentary majority from independence until 1981. In a 1981 by-election (in the Anson electorate) an opposition member was elected to parliament for the first time, and according to Quah (1985) and PAP leaders, this was partially due to dissatisfaction with HDB housing. In response, PAP Deputy PM Goh Chok Tong spearheaded a drive for the government to be more consultative and in 1983 set up the "Feedback Unit" under the Ministry of Community Development. In addition, the relatively insignificant loss of one seat to the opposition prompted the government to pursue a strategy of allocating services to HDB estates on the basis of voting patterns. In the 1984 general election PM Lee threatened to withdraw government services from constituencies which voted for opposition members (Tremewan, 1994). However, in the 1984 general election, which was held during an economic recession, there was a 13% swing to the opposition (Ho, 2000). In 1985 the minister of national development announced that the HDB would give priority to PAP constituencies in providing maintenance for lifts.

By the early 1990s, 87% of Singapore's population, all of the working class and almost all of the middle class, were housed in HDB flats (Figure 7.3). Eighty five percent of households living in HDB flats own the unit they live in on a ninety-nine year lease purchased from the government, which is in turn enabled to

recover a substantial amount of the construction costs (Chua, 1996). Most homebuyers utilise their savings from the compulsory Central Provident Fund (CPF), into which each Singaporean must contribute a share of their monthly gross salary, to make the purchase. This placed the PAP in a strong position to influence voting patterns, which in spite of remarkable achievements in Singapore, in the 1991 election under PM Goh Chok Tong led to a further erosion of the PAP's majority. In the following election, in 1997, the political imperatives of the form of HDB housing became even more apparent. In a strategy referred to as "votes-for-upgrading" HDB blocks in constituencies in which a PAP candidate won were eligible for upgrading and renovations, which increased the value of the flats (Chin, 1997). The election was successful for the PAP which gained back some seats lost in the 1980s and 1990, and some of this success has been attributed to the votes for upgrading strategy which was made possible because of the form of HDB housing:

...the PAP's linkage of political support with upgrading of public housing estates combined politics with administration. Whereas upgrading was initially meant to prevent the deterioration of older public housing estates, the new policy ties an administrative and aesthetic decision to political support for the PAP. The use of budgetary surpluses for this exercise, drawn from public revenue, violates the traditional administrative premise of such funds being used for public well-being with broad-based incidence (Ganesan, 1998).

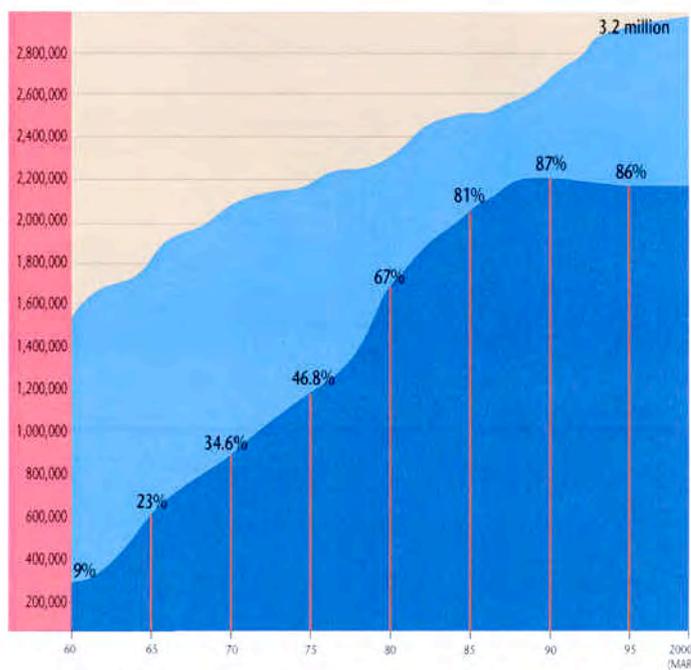
During the campaign, the PAP leadership revealed that the government would be able to tell, from the decentralised counting of votes, "... just which precincts within a constituency were for or against PAP candidates – and would disburse upgrading and other benefits accordingly (Chin, 1997).<sup>50</sup> In the 2001 election the PAP targeted the constituency of the popular, incumbent leader of an opposition party with the promise that precincts in the ward that gave the PAP more than 50 percent would be upgraded (*Straits Times*, 5 Nov. 2001). However, upgrading to

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<sup>50</sup> While it may only be able to discern voting patterns within a HDB precinct, the government has centrally computerised the details of who resides in each HDB flat, and "Citizens must report a change of address to the authorities within two weeks or be subject to a \$5000 fine or up to five years imprisonment or both. This monitoring is backed up by electronic surveillance" (Tremewan, 1994:68).

apartment building lifts in these precincts was ruled out because they are under the control of the local “town council”, a limited form of local government led by the local PAP MP and a membership which is approved rather than elected (Keogh, 1999). The lack of a PAP MP thus disqualifies a housing estate from certain types of physical improvements.

**Figure 7.3 Population housed in HDB flats**



Source: Research & Planning Department, HDB.

Estimated resident population in Singapore.  
 Estimated resident population living in HDB flats.

Source: HDB Annual Report (1999/2000)

The preceding discussion has emphasised how the location and form of public housing in Singapore materialised under the incumbent PAP regime. The public housing created a set of conditions which have influenced most other collective actions defining Singapore’s urban transport. Notwithstanding the political imperatives of Singapore’s public housing, the spatial arrangement of housing and other land uses by the PAP-state created patterns of movement which have influenced subsequent planning decisions over transport matters. One key episode

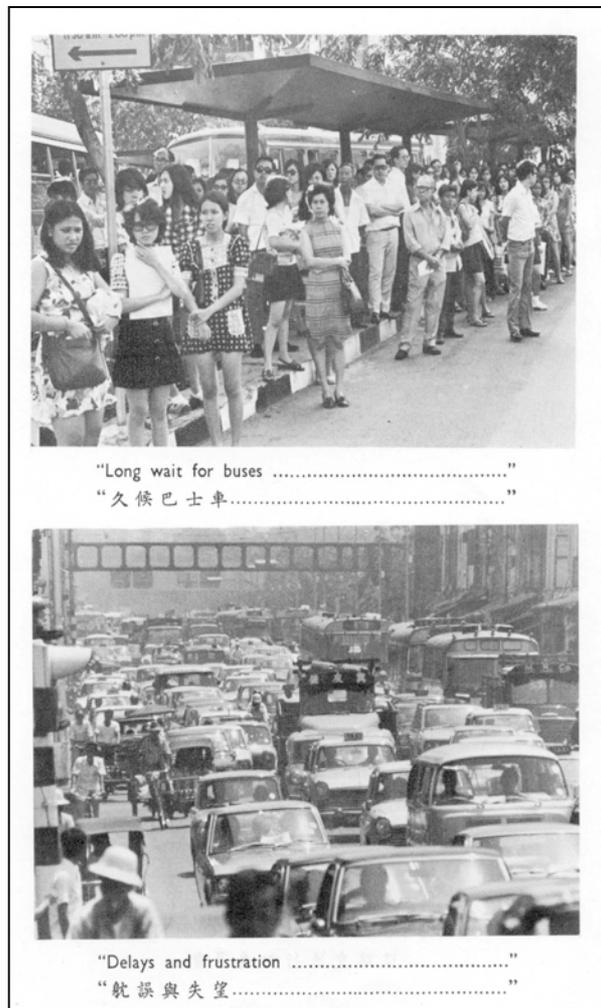
of state action involved the planning and decision surrounding the introduction of a mass transit system linking the HDB estates with employment locations.

### **7.3 The Mass Rapid Transit system (MRT)**

Up until the early 1970s, experience in Singapore seemed to be conforming to the experience of cities around the world. As the government continued on its aggressive programme of export-oriented industrialisation and public housing, transportation problems grew, particularly in the central area which was a major site of employment for many newly suburbanised HDB residents who commuted to the central area for work (Plate 7.3). At this time, the approach of government bodies to urban transport problems was uncoordinated and most activity concentrated on ad-hoc road widening and the construction of expressways, including the 35 kilometre Pan Island Expressway, which along with a comprehensive road network was under construction by the mid-1960s. It appeared at this time that full motorisation of urban transport, either by design or in an ad hoc way, was underway.

However, in the late 1960s the PAP leadership, which in the early post-independence years was concerned almost exclusively with industrialisation strategy and public housing, began to recognise transport problems and the need to do something different about them. In 1968 the importance of urban transport problems was formally recognised with the creation of the Ministry of Communications (Chin, 1998). This signalled the beginning of a co-ordinated and concerted approach described as “problem-driven” transport planning (Chin, 1998). The key problem identified by the PAP leaders was congestion of motor vehicles on roads, and the goal of reducing congestion has been in virtually all land transport policies since then (Ang, 1990).

**Plate 7.3 Transport problems in central Singapore**



Source: Road Transport Action Committee (1974)

Years earlier, the 1963 report prepared by a UN team of housing experts, had proposed types of urban transport infrastructure projects which were typical of those being undertaken in the USA and cities of some other industrialised nations at that time. The Team noted that while Singapore had “skipped the suburban railway and tram age and moved straight from the horse to the motor age”, the Singapore government had “not even started to develop a motor age road network and transport system” (Abrams et al, 1980:90). The recommendations of the Team focused on comprehensive traffic and transport planning for the whole island:

These should include a road network making it possible for the CBD to be reached within 30 or 40 minutes by car from any part of the

island, an integrated mass transit system (comprising a monorail system, water buses and feeder bus services on land) capable of dealing with peak loads of 50-60,000 persons per hour at prices within the economic reach of unskilled workmen, a suitable system of parking charges, loading and unloading controls and garages, flyover junctions and a network of safe and pleasant pedestrian malls and passages (Abrams et al, 1980:90).

Subsequently, a more in-depth study executed by Australian consultants for the UN and World Bank (working in conjunction with Singapore government officials) from 1967 to 1971 recommended proposals which emphasised higher capacity, corridor-based mass transport. It was argued that only mass modes would fit with Singapore's emerging spatial form which created high demand for travel between suburban housing estates, centralised employment in the CBD, and industrial estates. The "State and City Planning Project", which involved the preparation of comprehensive physical and transport development plans, argued for transport infrastructure which included a 32 kilometre mass rapid transit system linking the central area with HDB estates that were under construction and planned, and a comprehensive network of expressways and arterial roads to link industrial and residential areas (Wardlaw, 1998).

Following on from the "State and City Planning Project" recommendations which formed the basis of the 1971 Concept Plan (Figure 7.2), detailed analysis of mass transit was undertaken. Between 1971 and 1981, a three phase *Mass Transit Study* was executed by consultants funded by the United Nations Development Programme (UNDP) and supervised by the World Bank with the main purpose of examining rail and bus mass transit alternatives. From an early date, high capacity rail mass transit emerged as the clear favourite of consultants and of many Singapore government agencies which studied various aspects of the proposed system.<sup>51</sup> However, economists at the World Bank which financed the study did

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<sup>51</sup> The Ministry of National Development conducted a review of land use and transportation planning and concluded, given high forecast levels of CBD employment, that buses would not be able to cope. The Ministry of Defence studied the potential impact of decentralising employment to a second CBD which could relieve the need for high capacity rail services to the existing CBD, but it too came out in favour of the proposed MRT option (Rimmer, 1986; Seah, 1981).

not agree, and took the unusual step of inserting a disclaimer at the beginning of a summary report, stating that from a Bank review of the consultants' work:

...it is the Bank's opinion that the consultants' estimates of the bus operating costs are high and their estimates of the rail construction costs are low. Further, it is the Bank's view that if the costs were adjusted to be in conformation with the Bank's opinion, the Bus-Rail system would be uneconomic (Wilbur Smith and Associates et al, 1977:inside cover of report).

This scepticism toward rail mass transit reflected the beliefs of key PAP figures, including PM Lee Kuan Yew and Goh Keng Swee. Dr. Goh was an academic economist, PM Lee's chief lieutenant and Deputy PM from 1973-1984, and served as the "supreme ideas man" of the government (Minchin, 1990). Like Lee Kuan Yew, Goh was "rationalistic, elitist, and oriented toward technical sophistication" (Minchin, 1990:240). He was wary of the massive outlay of capital for a rail mass transit system (although like many economists, accepted spending on roads and expressways without much questioning), even though consultants had found that this was a superior option to an all-bus system and that the possibility of disastrous financial risks in building the rail mass rapid transit system were remote (Wilbur Smith and Associates et al, 1977). Spending a large government investment on a rail system also could have been incongruous with the elitist PAP's contention that it would not provide welfare provisions to citizens, nor would it subsidise services such as public transport. In spite of the concerns of the World Bank and these PAP leaders, the study continued and prepared a preliminary engineering design and recommended route for an initial rail mass transit system (Mott Hay and Anderson Overseas et al., 1980).

However, by the time this study had been completed, almost 10 years had passed since the completion of the 1971 Concept Plan, and the fears of the "rail sceptics" had still not been allayed. At this point an alternative study team was brought in by Singapore's Finance Ministry and the World Bank. The "Hansen Team" was comprised of prominent Harvard University transport economists including authors of the seminal *The Urban Transportation Problem* (Meyer, Kain, and Wohl, 1965), which argued that in the cities of the US, public transport was

declining as a result of free market forces and economic growth and that bus-based mass transport (but not necessarily publicly owned and operated mass transport) would be more cost-effective than rail. The thrusts of the resulting “Hansen Report,” *Singapore’s Transport and Urban Development Options* (MRT Review Team, 1980), were that the planned MRT system was “at best a marginal investment for Singapore,” that a “high-performance express bus system” utilising expressways could provide a level of service comparable to the proposed MRT, at substantially lower capital and total costs, and that changes in urban development policy (decentralisation) could reduce the demand for “expensive peak period transport facilities” (MRT Review Team, 1980:1-2).

The analyses summarized in our final report conclusively demonstrate that an all-bus system could easily serve the levels of Central Area travel projected for 1992. An express bus system exploiting Singapore’s rapidly developing expressway system, moreover, would not only have substantially lower capital costs than the recommended rail MRT, but it might also provide superior service (MRT Review Team, 1980:14).

Unlike the previous studies, the findings of the Hansen team were given “wide attention in the local media” and there was a televised forum on the MRT featuring representatives of the Wilbur Smith and Hansen teams in debate (Seah, 1981:300). The release of the Hansen Report was followed by a form of “rebuttal” report written by a member of the consulting team responsible for the previous (“pro-MRT”) studies:

In conclusion, the Hansen Team has designed an alternative all-bus system which, it is conceded, differs from earlier all-bus designs. It can be implemented if we want to. The resulting bus services will, however, be characterised by bus stops in the Central Area having very large volumes of people waiting for buses, by delays at these bus stops, by commuters having to pay higher fares for less frequent services and having to transfer buses more frequently. In other words, it will not be more comfortable or more reliable than what exists today. In addition, it would mean less road space for other road users. It will certainly not provide a modern and convenient public transport system that would offer an attractive alternative to either the private cars or the proposed MRT. This all-bus system with crowded buses at infrequent intervals will be no different from what exists today in Bangkok, Jakarta, Manila and other Asian cities (Wildermuth, 1980:8).

In early 1981 most of the aforementioned reports, which had previously been labeled “confidential” or “secret,” were publicly released by the Ministry of Communications. Seah (1981) noted that the extensive public discussions and debates in 1980 occurred without access to the technical documents. Rimmer (1986b) stated that the findings of the Hansen report caused considerable nervousness and the documents were released as a means of persuading any doubters of the decision, and also to give the appearance of wide consultation. Seah (1981:300) interpreted the debate and delayed decision as the result of “...a redefinition on governmental thinking on the need for wider participation and deliberations on major issues affecting the society.” In the meantime, a follow up study was completed in 1981 and evaluated how well an all-bus system could serve Singapore’s public transport needs in 1990 and 2000. This study, the *Comprehensive Traffic Study*, prepared by the “pro-rail consultants”, concluded that:

...passengers travelling on the proposed bus system from areas along the inner portions of the proposed MRT would find a lower level of service than provided by today’s bus system. ... This kind of uninspiring solution would be rather uncharacteristic with Singapore’s tradition of progressive problem solving (Wilbur Smith and Associates et al, 1981:41-42).

The sometimes acrimonious debate was resolved when the PAP leadership was swayed and in mid-1982 the official decision to proceed with the MRT was announced, although according to some sources, the decision had been made some time before. Phang (1997) suggested that the ultimate decision to proceed with the MRT hinged on the perception amongst some government planners that Singapore’s growth as an international financial centre and a regional service centre would depend on the agglomeration economy of Singapore’s central area, which would be made more attractive by rail. This emphasis on the perception of Singapore government planners contrasts with that of the former Prime Minister, who like most of the PAP leadership de-emphasises the political and contested nature of decision-making and emphasises the role of rational choices conditioned by natural topography and climate, and “de-politicised” actions undertaken by a fundamentally benevolent regime:

... before we decided on an underground mass rapid transit (MRT), we had a public debate for a year on the merits of an MRT as against an all-bus system using dedicated roads. We also had American consultants advise us on the two options. They convinced us that an all-bus system would not provide as satisfactory a solution, because in wet weather the buses would slow down and clog up the system. This would not happen with trains (Lee, 2000:234).

The decision by the PAP leadership to proceed with a rail-based mass transit system was accompanied by a government commitment to financing the initial capital expenditure (5 billion Singapore dollars at the time) required to construct and equip the MRT. Initially, the government planned to use the sale of reclaimed land next to the CBD to finance the massive expenditure. However, in the early 1980s as recession came on, land prices fell and this option was no longer feasible. The government financed the system through loans while also taking advantage of export credit financing which was available for civil works and electrical and mechanical equipment. Construction proceeded quickly in spite of numerous technical difficulties such as construction through densely populated areas. The costs of building the MRT were reduced by the 1966 Land Acquisition Act which also streamlined the process of acquiring land for the government, which acquired land at lower prices than if it had to bargain with private landowners (Cervero, 1998:160). In spite of some initial debate, the MRT was routed through a densely populated area of the city where land acquisition was more expensive and challenging. The principal awardees of the MRT construction contracts were from Japan (Kawasaki Heavy Industries group received the “plum of the MRT contracts” for provision of 396 rail cars), Britain, France, Belgium, and the US, which were in almost all cases paired with local partners (*Far Eastern Economic Review*, 26 April 1984).<sup>52</sup>

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<sup>52</sup> The Singapore government, since its early days of industrialisation, has offered foreign contractors in joint ventures with local partners preferential margins of up to S\$5 million in tender price: of the 36 civil contracts for MRT construction, 21 were awarded to joint ventures, and these were for the larger dollar value contracts (Sridharan, 1992). Most of the foreign partners were multi-national firms, while the local firms were mostly privately-owned, family-controlled organisations (Ibid).

A side effect was that the massive public expenditure functioned as a form of Keynesian economic strategy to stimulate the economy during a recession.<sup>53</sup> The recession also served to depress construction costs, while the rapid pace minimised costly disruptions and the amount of time that borrowed money was being used without a return. Finally, a competitive open tender system in which foreign companies could bid directly kept costs of construction contracts and material costs lower than in a non-competitive system.

The long-awaited opening of the first phase of the MRT occurred alongside a carefully managed transition in PAP leadership from Lee Kuan Yew to Goh Chok Tong, although the retired former PM continued to maintain great influence through a lifetime appointment as Senior Minister. Both the introduction of the MRT and the political transition were judged as successful from the PAP's perspective at that time, in spite of initial mass transit ridership that was lower than anticipated. Partial operations began in 1987 and the full first-stage project comprising 42 stations and 67 kilometres began operations in 1990. During the first year of full first phase operations in 1990, average weekday ridership was 564,000; while below the projection of 800,000, the target figure was reached in 1996 with the opening of the 16 kilometre Woodlands extension which created a loop similar to the ring envisaged in the 1963 plan. Work on the extension began shortly after operations commenced, and was constructed in conjunction with three new HDB estates (Sembawang, Woodlands, and Choa Chu Kang) in the north and north-west of the island (Willoughby, 2000). At the time there was some criticism in Parliament from the opposition members (elected during the 1980s) for proceeding with the Woodlands line while putting off plans for a Northeast line which would have served a larger number of existing estates.

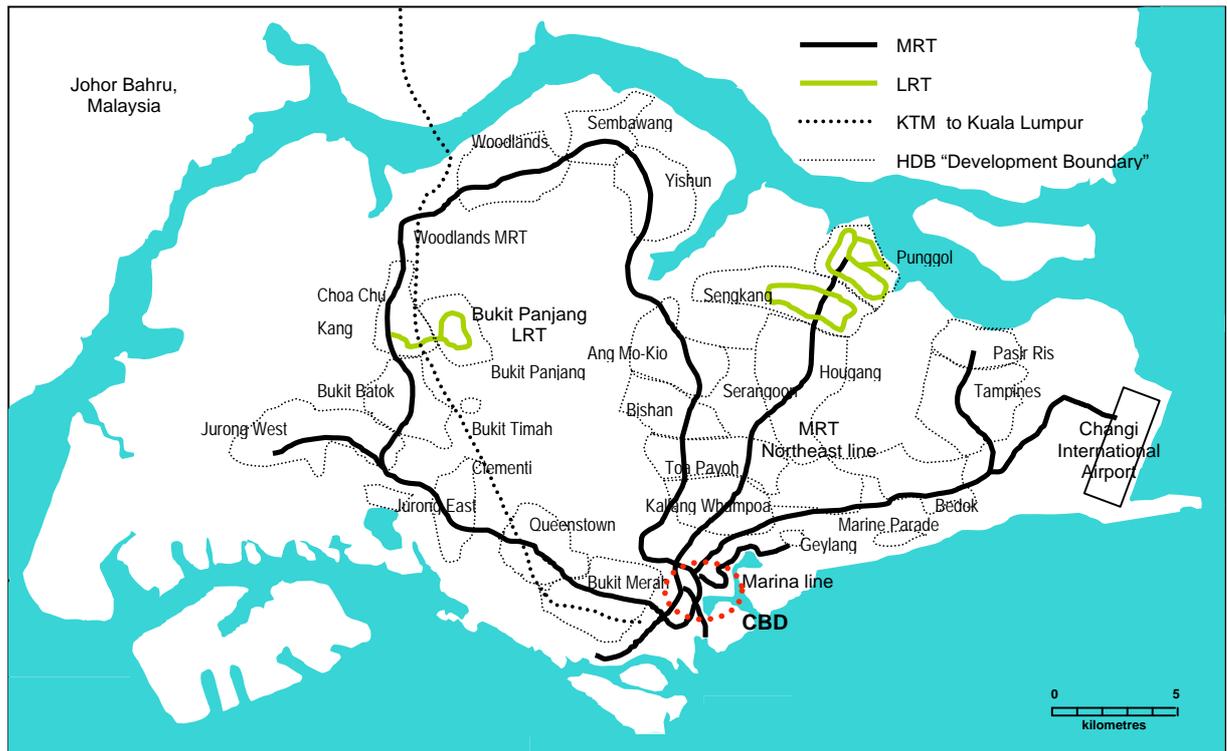
Nonetheless, a key to the success of the MRT was the close coordination with the HDB estates: by the time the MRT began operations, a "captive market" of HDB

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<sup>53</sup> According to Castells et al (1990:81), "...the government has systematically used development expenditures as countercyclical stimulants to pump the economy out of recession (for example, in 1974/75), generally through public housing construction and works in urban infrastructure."

residents dependent on public transport was located in areas served by the new rail system. Cervero (1998) describes the relationship between rail and public housing as “intimate” and he notes that about half of Singapore’s population resides within one kilometre of a rail station (Figure 7.4 and Plate 7.4). Supporting infrastructure and integration (in terms of fares and physical facilities) with the government-regulated buses had been under way since the early 1970s and created favourable conditions. “Even the locations of bus stops within HDB estates are decided by HDB architects and planners, with the agreement of the Singapore bus services” (Castells et al., 1990:264). In addition, the government charges for parking at HDB estates to encourage the use of public transport.

**Figure 7.4 Location of HDB estates and rail system (operational and nearing completion)**



**Plate 7.4 Integration between MRT and HDB estates**



Source: Jeff Kenworthy

The success is furthered by the integrated ownership and operations of the system, which is dominated by PAP establishment figures. The Mass Rapid Transit Corporation (MRTC) owns and leases the operating assets to Singapore Mass Rapid Transit (SMRT) Ltd, a publicly listed private company which operates the

system. While SMRT is a public company,<sup>54</sup> the majority stake is held by Temasek holdings, a holding company wholly-owned by the Singaporean government. In 2002, the Executive Director of Temasek Holdings was the wife of Lee Hsien Loong, the deputy Prime Minister, and daughter-in-law of Lee Kuan Yew (*Far Eastern Economic Review*, 7 November 2002). As in many of Singapore's government-linked companies, board members and executives of the MRTC include members of the PAP establishment, and as such are subject to the political influence of the PAP. For example, in 2001 the CEOs of SMRT Corporation and Singapore's power company swapped jobs; previously, one had been the Chief of the Navy while the other was the Chief of the Army (*Straits Times*, 6 November 2001). Due to tight control of the media by the PAP-state and low levels of transparency in the corporate sector (Rodan, 2000), it is difficult to research the companies operating the transport system. For reasons that are not entirely clear, the government in recent years has been supporting two "private" transport operators. The new North East MRT line is to be run by SBS Transit which emerged in 2001 out of what was originally a private bus company, Singapore Bus Services. SBS Transit will also operate two LRT lines which are currently under construction and which will act as feeders to the North East MRT line. The other operations are run by SMRT, which runs the Bukit Panjang LRT, MRT, and Trans-Island Bus Services.

#### **7.4 Vehicle restrictions**

The integration of the MRT with HDB housing estates, ideally suited to mass transport serving a core of centralised employment, fulfilled some basic spatial preconditions for public transport and rail in particular to carry a large share of trips. However, these preconditions were not sufficient to explain the emergence of Singapore as what Cervero (1998) identifies as a "transit metropolis". One reason is that during the 10 year period of planning, debate, and decision-making surrounding the MRT, an extensive system of high-speed expressways were planned and built. In terms of infrastructure, much of Singapore is designed around facilitating private motorised mobility (Plate 7.5). Also in line with

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<sup>54</sup> An initial public offering of shares in the profit-making company was undertaken in 2000.

modernist principles of completely segregated urban movement, in the 1980s Singapore's Public Works Department undertook an extensive programme of pedestrian overhead bridge-building in concert with acceleration of expressway construction (Cheong, 1992).

Within this context, the key to understanding the success of the MRT has been the imposition of high charges on the ownership and use of motor vehicles, which were kept at a relatively low level, and which were kept out of the purchasing power of lower middle class and working class households occupying public housing. Barter (1999) argues that it was the imposition of these restraints at an early stage of economic development and car ownership that set Singapore on a trajectory different from Bangkok and Kuala Lumpur.

The implementation of measures to charge substantially for motor vehicle use and ownership is a prime reason why Singapore has for some time attracted a disproportionate share of attention among urban transport experts around the world. Many policies and plans similar to those implemented in this small city state have been proposed but not implemented in cities around the world. *The Economist* (6 December 1997) even went so far as to enthuse that Singapore "invented" road pricing. This section of the dissertation describes the recent history of these measures, which are integral to the functioning of Singapore's urban transport system.

#### **Plate 7.5 Expressways and modernist urban form in Singapore**



Source: PWD (1992)



Source: URA (1991)

By the late 1960s Singapore had Asia's highest national car ownership levels after Japan, and government concern began to mount about the ability of road networks to accommodate the rapidly growing vehicle fleets (eg. Karni and Chen, 1969). Between 1962 and 1973, the average annual growth rate of private cars had been 8.8% per annum (Holland and Watson, 1977). In addition to prescriptions concerning housing, roads, and mass transit, the 1971 Concept Plan and subsequent mass transit studies proposed restraints on car ownership and use. In 1972 the government introduced the "Additional Registration Fee" at a rate of 25% of the open market value of the car (Ang, 1990). In 1974 this was raised to 55%, 100% (1975), 125% (1978), 150% (1980), and 175% (1983) (Ang, 1990). The ARF and other heavy motor vehicle taxes introduced in the early 1970s, began stabilising motor vehicle fleet growth, but traffic congestion in the dense central area continued to be viewed as a problem.

In 1974 a high level inter-ministerial Road Transport Action Committee was set up to coordinate the transport planning measures and to formulate future policies to reduce central city traffic congestion, which became the main focus of government concerns about urban transportation. This concern of the PAP leadership corresponded closely with the conception of transport economists of "the urban transportation problem" (Meyer, Kain and Wohl, 1965). In 1975, a form of road pricing long proposed by transport economists and consultants, the Area Licensing Scheme (ALS), was introduced with great success at reducing traffic congestion in the central area (Figure 7.5). According to Lee Kuan Yew, the idea had been his:

By 1975 traffic jams at peak hours were unbearable. I had read a paper proposing that, to reduce congestion, we charge a fee for cars entering the central business district (CBD) at peak hours. I asked our officials to examine this idea. They found it feasible. They proposed gantries with notices to warn all motorists entering the Area Licensing Scheme (ALS), which covered the CBD at a restricted time, to display a licence on their windscreen. I had the plan discussed publicly in the media for several months. We refined the proposals, for example allowing cars with four passengers to go through without a licence and settling for a charge of S\$3 per day, less if bought on a monthly basis. The plan eased rush hour traffic jams and was well received (Lee, 2000:232-3).

A team comprising the World Bank Transport Research Division, the Singapore government, the United Nations Environment Programme and the US Department of Transportation, designed and carried out extensive data collection before the ALS went into effect and a follow up programme afterward. The team found that the ALS had resulted in increased ease of crossing streets for pedestrians, cleaner air, and an overall perception that downtown Singapore had been improved, as well as exceeding the government's goal of a 25-30% reduction in morning peak traffic entering the central area (Holland and Watson, 1977). However, the positive assessment was later challenged by Wilson (1988) who argued that some commuters, particularly bus users, were made worse off by the ALS. He suggested that overall social welfare was lower than before because toll rates had been set too high, and that this was related to the lack of democratic checks in Singapore's political system. A similar concern had been raised shortly after the introduction of the ALS by Tan (1976) who argued that the ALS operation favoured a wealthy minority of motorists who could afford the fee and benefited from driving on the un-congested roads during the restricted hours while the poorer motorists had to make adjustments. Also, small shops and hawker stalls suffered from a drop in earnings as a result, while larger businesses and office buildings began proliferating.

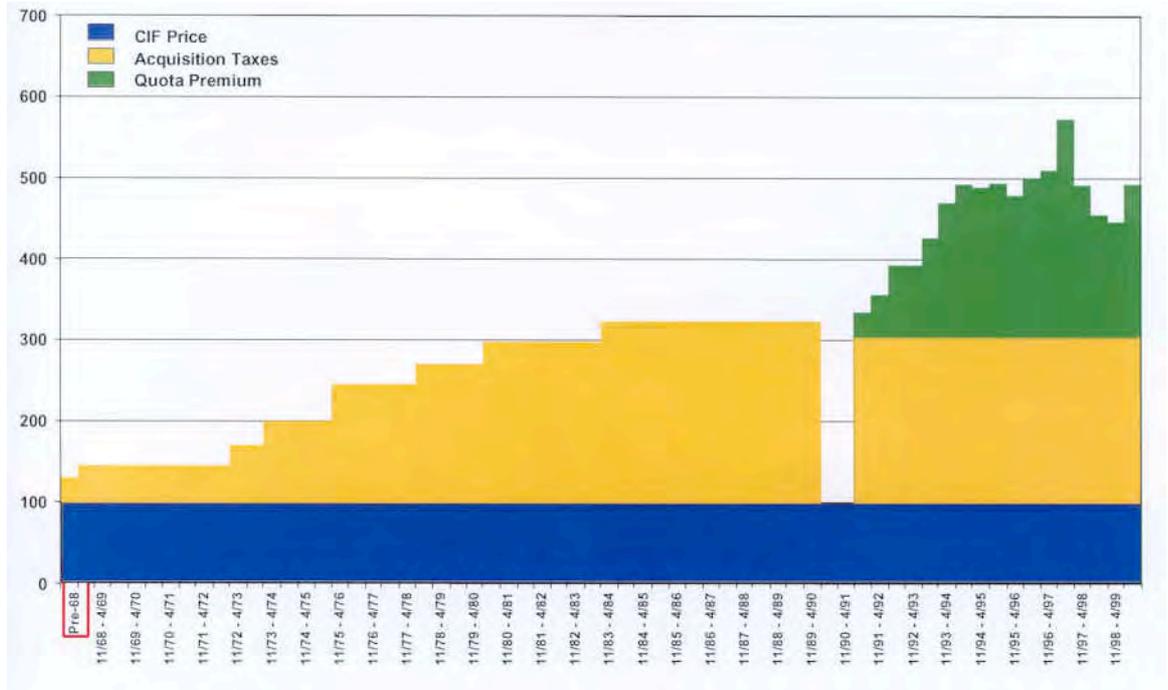


In spite of the ALS, which covered use of motor vehicles in just the central area and high taxes on ownership, vehicle numbers continued to rise in the 1980s. During 1988, the Minister for Communications and Information announced that since new roads were being built at 1% per year, the government would tolerate a 1% per year increase in cars on the roads, and he hinted that some form of restrictions on car ownership would come into effect (Ho, 2000). The measure designed and implemented was an annual quota of motor vehicles permitted to register for use. Under the Vehicle Quota System (VQS), the government decides how many new motor vehicles will be allowed on the road each year, then allocates this quota monthly for auction to the public. Prospective motor vehicle buyers first have to obtain a Certificate of Entitlement (COE) before they can purchase the vehicle. According to Lee Kuan Yew, the idea for bidding on certificates to purchase and operate cars was his, and that by his calculation the roads could accommodate a 3% annual increase in cars, and that is what was permitted (Lee, 2000). One side effect of the high ownership cost is encouragement to use the car extensively in order to make it worthwhile: it was estimated in the mid-1990s that the average annual mileage per car was almost double in Singapore compared to Japan (*Straits Times*, 5 January 1996).

The high price of COEs, together with acquisition taxes make the price of a car extremely expensive has been a source of popular dissatisfaction. In early 2003 the price of a COE for private cars was about 27,000 Singapore dollars, while for a goods vehicle or bus it was about 10,000 Singapore dollars (<http://www.onemotoring.com.sg/main/default.asp>) and comprised a large component of the cost of a vehicle (Figure 7.6). A recent working paper produced for the International Monetary Fund (IMF) on the experience with the VQS argued that while successful at reducing the number of motor vehicles operating, the intricacies of sub-categorisation of the quotas "...led to a highly regressive outcome, with buyers of inexpensive cars paying more in relative—and, in some cases, absolute—terms than buyers of expensive cars" (Tan, 2001:22). The head of the Land Transport Authority replied to news of the findings through the letters

page of the *Straits Times* by arguing awkwardly that social equity is not a concern of the VQS so it should not be judged anything but successful.

**Figure 7.6 Retail Price of Medium-Sized Car Relative to CIF Price, 1968-99 (excluding dealer mark up)**



Source: Willoughby (2000)

In 1989 the ALS was modified to target traffic congestion at various times and places, to increase the coverage of the ALS to vehicles previously exempt, to withdraw exemptions (for motorcycles, goods vehicles, and non-scheduled buses), and to extend the hours to the evening rush hours on weekdays, in addition to the then existing Monday-to-Saturday hours. Rates on cars were decreased while for taxis they were increased. Changes were made in 1989 when all road vehicles except public buses were required to pay the ALS fee and car pools (four or more occupants) were no longer exempt (Ang, 1993). According to Menon, chief engineer in the PWD, the revision was in response to concern about increasing numbers of cars, and people “tricking” the scheme by picking up bus passengers. Another reason was to boost MRT ridership, which was lower than expected. The introduction of the evening ALS was indeed successful in boosting boosted MRT

patronage (Ang, 1996). In these ways, the PAP-state has been able to “optimise” the performance of the transport system according to its goals.

Nonetheless, there have been some challenges to increases in the cost of motor vehicles, although with little impact. The 1989 changes to the ALS were opposed by a number of affected groups. The Motorcycle Trade Association appealed for the exemption of motorised 2-wheel vehicles on the grounds that they don’t contribute to traffic congestion and are used largely by lower income groups (Menon and Hoi, 1993). The government partially capitulated and lowered the fee for motorcyclists, but a similar protest by used car dealers was unsuccessful (Ibid.). In 1989, a Select Committee on Land Transportation Policy held unprecedented public hearings under the auspices of the Parliament, partly to address popular dissatisfaction with measures:

The Chairman of the Government Parliamentary Committee on Communications wanted to examine the latest measures. He arranged for the setting up of a Select Committee on Land Transport Policies, which among other things wanted to discuss the necessity of the evening ALS. The committee held public hearings for two days in November 1989 and called for submissions, 66 of which were received. It considered the evening ALS only a success if the majority of the people were getting home earlier. The feedback to this Committee gave the impression that this was not so. The statistics proved otherwise, i.e. the traffic conditions in the city were better, although there were some jams on the ring roads and expressways. Bus speeds had increased. All this indicated that the majority were enjoying faster journeys and getting home earlier, in spite of the feedback. This proved the point that people believe what they want to believe. ... The advantage of a public hearing was that it allowed the public to air their grouses and tribulations. The government was able to better explain its viewpoint and take some measures to partly meet the requests of the public (Menon and Hoi, 1993:10-11).

This view, articulated by a former chief engineer of the PWD, is indicative of the PAP-state’s disappointment with and disdain for citizens’ views, which it nonetheless regards as useful insofar as they aid in the implementation and “fine tuning” of policies and plans.

In 1998, after many years of planning, the ALS was replaced by a new and expanded scheme for charging for the use of congested roads called Electronic Road Pricing (ERP). As with the ALS, its predecessor, ERP has attracted worldwide attention because it is the first practical and permanent application on a large scale of something which has been long proposed by transport economists. Singapore's ERP system was the first successful implementation of government charging for the use of roads using advanced technology that does not require vehicles to stop.

Although the government in Singapore insists that ERP is for minimising congestion rather than revenue generation, revenues have gone up overall as a result and there is no dedicated re-distribution of the revenue or rebates, although some undoubtedly is used to improve public transport. Asher (1999) estimated that in 1999 motor vehicle taxes comprised 25% of Singapore's total taxes, or 4.4% of GDP. Among 150 countries around the world, Singapore's vehicle taxation in 2000 ranked third highest, while the price of petrol was in the top quintile of nations (Metschies, 2001). Some economists have criticised Singapore's road pricing on the basis that there is so little congestion that roads are no longer "scarce" and the result is a wasteful under-utilisation of roads. One reply from the PAP-state was that "it is always better to prevent congestion from happening than to allow it to take over and then try to address the situation—hence the apparent zero tolerance toward congestion" (Menon and Hoi, 1993:27).

Government measures charging for the ownership and use of motor vehicles have been the key to understanding why Singapore has both free-flowing road traffic and expanding road networks and arterials, at the same time as a highly utilised public transport system. Nonetheless, while the public transport system is highly utilised, it is also a source of discontent for many Singaporeans. With the continual expansion of road infrastructure, a large and growing range of destinations and opportunities (i.e. "accessibility") were open to those who could afford to own motor vehicles. However, the government sets the costs at such a

high level that it is out of the reach of many households, and therein lies a source of frustration among a large segment of the population residing in public housing. Dissatisfaction amidst success and wider societal changes in Singapore frame government-led actions to fashion a new strategy, institutions, and processes in the 1990s.

### **7.5 Towards a “World Class Land Transport System”**

The early 1990s heralded not only a change in Singapore’s PAP leadership, but also in the functioning of the bureaucracy and the character of planning interventions. The challenge from the PAP-state’s point of view was to address growing social expectations of the middle class, discontent among the working class, and growing inequality, while maintaining its virtually absolute control over politics in Singapore. PM Goh Chok Tong, who had been responsible for introducing “feedback units” to facilitate consultation between the PAP-state and citizens in the 1980s, came to power amid expectations of a change in leadership style and greater public involvement in government policy-making and planning processes (Ho, 2000). However, in the first election with Goh as PM in 1991, the PAP suffered their worst result ever, with the popular vote dropping to 59.3% (Ho, 2000). It was publicly announced that Goh would interpret the result as a rejection of more participatory politics by the PAP, and foreshadowed greater caution among Goh’s administration toward public involvement and participation in administrative processes. Nonetheless, the PAP-state continues to face a new era which presents a number of challenges:

In the early stages of the 1960s and 70s, the bureaucracy had a relatively clear and given problem-definition of the “catching up” exercise and the basic universal good of socio-economic development. The bureaucratic elite is now expected to be engaged in a more proactive process of problem-definition, that is, of creating a vision of the future of Singapore and “building it”. This is different from being a bureaucracy geared towards problem-solving, which is focused mainly on policy implementation and system maintenance. These issues of distributive justice and a differentiated response to needs question the adequacy of an ideology of bureaucracy that is based mainly on technocratic management (Koh, 1997:114).

In 1991 the main urban planning agency, the Urban Redevelopment Authority, released *Living the Next Lap: Towards a Tropical City of Excellence* (Urban Redevelopment Authority, 1991), which was intended to guide Singapore into a new era of development. This document included a vision for “regional centres” of up to 800,000 residents who have jobs “closer to home”, better quality housing, including more low-rise and medium rise housing, and an improved transport system with MRT extensions, a light rail system, expanded ferry system, and “detailed plans to make our city more accessible to pedestrians and by bicycle, and improved roads to bring better traffic flow” (Urban Redevelopment Authority, 1991:6). One rationale for this shift from planning for one CBD to planning for the new regional centres located 10 to 15 kilometres from the existing CBD was to address the problem of growing commuting times (Lai et al, 2001).

In 1995, the government’s urban transport bureaucracy was re-organised and a new phase of rail expansion began. Chin (1998) argues that this began a new, “vision-driven” approach to transport planning which replaced the “problem-driven” approach of the 1970s and 1980s. Four government departments, including the Department of Public Works which had played a key role by shaping transport infrastructure, were merged to become the Land Transport Authority (LTA), which was established to oversee all land transport in Singapore with a higher degree of coordination. A White Paper, titled *A World Class Land Transport System* (LTA, 1996) was tabled in Parliament and set out a vision of the future and how the new institution would achieve its mission. This vision was of a system 10 to 15 years in the future when commuters have “highly-efficient, comfortable and convenient rides in free-flowing traffic” and it stipulates that “public transport is and will always be the major mode of transport” (LTA, 1996:II). In order to meet these goals, major road and rail infrastructure expansion was announced and incorporated into the plans of the LTA. Accompanying the creation of the LTA and the tabling of the White Paper, there was some recognition that captive public transport users were not entirely satisfied with the quality of the urban transport system provided by the PAP state. This was, and continues to be, reflected in a constant stream of letters to the *Straits Times*

newspaper indicating displeasure with bus services and lack of disabled access to the MRT stations. In addition, the inability of many middle class Singaporeans to afford private motor vehicles was reported to be a particular source of dissatisfaction (*Straits Times Weekend Edition* 5 March 1994). The rail expansion appears to be intended to address the problem of “an undercurrent of dissatisfaction” among public transport users (Han, 1994). According to the first CEO of the LTA:

Many Singaporeans are not content with the bus services which are largely air-conditioned. They want easy access to the MRT as it offers faster and more reliable service, and occasionally, taxi rides. The ultimate in transport for many Singaporeans is still to own a car. But it is not possible in land scarce Singapore (Liew, 1996:6).

An increase in rail investment and better integration of public transport appear designed to deliver a higher quality and quantity of public transport to HDB residents, while simultaneously pursuing road expansion and free flowing traffic, which primarily benefit a car-owning élite, as well as road freight operators.

The White Paper announced the government’s preliminary plans for three more extensions to the MRT network (a 20 km North-East line, a 16 km Kallang line, and a 20 km Northshore line) and the intention to build Light Rail Transit (LRT) systems to serve as feeders to the MRT network. The government set the ambitious target to “...expand our rail network so that it is as comprehensive in coverage as the London Tube or Paris Metro which started in 1863 and 1900 respectively” (LTA, 1996:III). Zurich’s modal split of 75% of trips into the city centre by public transport is identified as a goal. A move to LRT in Singapore would appear in some respects to be an attempt to follow Zurich’s approach in order to address some user dissatisfaction with buses. A Singaporean delegation led by the Minister of Communications inspected light rail systems around the world in 1995. In Europe many of the systems are at grade and represent a move away from modernist ideas of grade separation and utilitarian approaches to speeding movement and a desire to reclaim streets from cars. However, in Singapore the initial LRT systems are all grade separated and follow modernist transport planning principles.

On the occasion of the opening of the 16 kilometre Woodlands MRT extension, PM Goh formally announced that the first LRT would be built at Bukit Panjang, where it would serve two HDB estates. An official reason for the location of the 8 kilometre Bukit Panjang LRT was that there was concern about the low usage of the MRT by local residents, and the LRT would expand MRT catchment (Low, 1996). Local residents were consulted on certain aspects of the planning of the system and had some input into superficial elements of the system such as colours and the names of stations. The system was built by a consortium of local and international companies (ABB Engineering and Daimler-Benz), and is owned and operated by a subsidiary of the SMRT.

The announcement of the Bukit Panjang LRT project in 1996 was followed in the same year by the announcement that a fully underground Northeast MRT line would proceed, and later that year a long-planned extension (a 6 kilometre “spur”) to Changi International Airport was announced. The Changi line was announced by Deputy PM Lee Hsien Loong (Senior Minister Lee Kuan Yew’s son) shortly after the government of Malaysia announced that it would build a high-speed rail link to its new international airport. The Kuala Lumpur International Airport was built with massive over-capacity in order to compete with Singapore’s airport. A branch line to Changi airport was studied in 1985 by UK consultants, but a decision to proceed with the line, which is unlikely to cover operating costs (based on international experience), had previously been deferred. While the forecasts and actual ridership figures were not publicly available, it is highly unlikely that the additional ridership will be sufficient to re-coup operating costs, which will likely be subsidised by fare box revenue from higher volume sections. While in and of itself this is neither problematic nor unusual around the world, it goes against the PAP-state’s contention that it will not provide welfare or subsidised government services to the population.

Financing this expansion of rail has been expedited by a slight change in the way the government financed rail infrastructure, and which was announced in the

White Paper. The government increased the viability of rail mass transit by committing to funding not just the first set of operating assets, but also to price replacement assets at the cost of the first set of assets. In addition, the White Paper emphasised the importance of viability in terms of finance, ridership, and “realistic and affordable fares”, but opened the door for even “non-viable” rail systems according to the criteria set out:

LTA can now review all rail projects and implement those which are considered viable in terms of financing, ridership and realistic and affordable fares. Even with this change, some projects may still not be viable. For marginal projects, we can consider implementing them if commuters find the projects worthwhile to them, as evidenced by their willingness to cover operating costs (LTA, 1996, VII).

How captive public transport users can express their “willingness to cover operating costs” of rail systems which do not yet exist is not explained in the White Paper. One suggestion could be through feedback sessions with PAP MPs. Another could be through the letters page of the English-language *Straits Times* newspaper, which provides a forum for criticisms and discussions of transport through letters to the editor. Since the 1990s politicians have required heads of relevant government departments to respond promptly to all concerns in writing. However, these feedback sessions and letters to the editor exclude certain segments of the population, and in particular non English-speaking, working class Chinese HDB residents, a social group which comprises much of the electoral base of the main opposition parties. The government has made some changes based on dissatisfaction expressed through newspaper letters, but generally this medium serves as a means for the bureaucrats to communicate or explain their policies and programmes rather than seeking real participation. An example of complaints leading to action occurred in the 1990s as the difficulties of the handicapped in using the MRT was raised as an issue and received attention on government-sanctioned “feedback” mechanisms such as radio and TV programmes (Ho, 2000). As a result, a number of MRT stations were retro-fitted with lifts and ramps to make them easier to use for the elderly and disabled.

Another means of demonstrating willingness to pay appeared to be through voting for the PAP in national elections. This was evident in the 2001 election campaign, when the North East MRT line, which was under construction, was used for political purposes. The new underground line, opened in late 2002 passes through the constituency held for the last 17 years by Chiam See Tong of the opposition Singapore Democratic Alliance. Two stations, Sennett and Woodleigh, are located in the single seat constituency, but whether or not they would open along with the North-East line in 2002 was called into question during the campaign. The PAP candidate contesting the seat of the incumbent opposition politician, as well as the Minister responsible for the MRT, stated that the stations would only open if “demand” and “activity” levels warranted. However, while the transport planning concept of “demand” (demand for transport based on existing and future activity patterns) was used, it was implied by the PAP that the only way people can change demand was through voting for the PAP.

While this could be dismissed as simply the grandstanding of democratic politics, the PAP control over the Land Transport Authority, the HDB, the MRT, and other bureaucratic institutions brings significant weight to the threat. At an election rally, the PAP candidate stated that the stations would not be opened once the North-East line opened in 2002 because there was not enough demand, but if he was elected he would be able to tell the Government (which had already been announced as the PAP because the opposition did not have a sufficient number of candidates) that there was enough demand. These statements were reinforced by a senior PAP minister, when asked if Potong Pasir’s residents can expect the Sennett and Woodleigh stations to open once the North-East MRT line starts running, said it “depended on demand” (*Straits Times*, 24 Oct 2001).

This is undoubtedly a powerful inducement given the control that the PAP state wields over the development of infrastructure and given the very real impact of these infrastructure decisions on material well-being of HDB residents who are not guaranteed rights to government services or welfare. Also during the 2001 election campaign (and as a recession loomed), commitments to further large

scale rail expansion up until at least 2012 were made.<sup>55</sup> In 2002, a new, 20 km underground MRT line serving the North East of the island is scheduled to begin operations. This will be complemented by two more feeder LRTs, currently under construction at Sengkang and Punggol HDB estates. Punggol 21 was conceived in 1996 in the words of PM Goh, as “a living environment that would appeal to a new generation of better-educated, more sophisticated Singaporeans” (Goh, 2001). In addition, work is currently underway on a new automated underground rail system (Marina/ Circle line) serving reclaimed land in the central business area.

Researching how these extensions have been planned and how decisions were made and debated has been made difficult due to the lack of public access to documents. Ironically, while PM Goh came to power with the promise of being less “top down” and more open than his autocratic predecessor Lee (Ho, 2000), there has been no significant public debate over substantive transport decisions during the 1990s. Unlike the uncertainty and debate characterising the process of making the initial decision over the MRT, there has not been any significant public debate, although some of the proposals would appear to be controversial. Most notably, while the government has vowed not to subsidise transport, it is clear that ridership on the LRT is lower than anticipated and that the Changi Airport line, while arguably a valuable investment, would not be a self-supporting, free standing piece of infrastructure: other parts of the MRT will be cross-subsidising the system.

While the 1997/98 Asian economic crisis affected Singapore less than most neighbouring nations, further widening of the income gap was reported in 2000 (Han, 2000). Dissatisfaction of public transport users, particularly with bus services, has occurred amid continual upgrading of private motor vehicle infrastructure and reflects a social cleavage. A focus of the PAP-state is now

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<sup>55</sup> Minister for Communications and Information Technology announced that about \$11 billion (Sing) would be spent on three new lines – two MRT and one LRT—as part of the Government’s plan to make the rail network the backbone of Singapore’s public transport system (*The Straits Times Interactive*, 24 October 2001).

addressing the real or perceived inferiority of public transport service relative to private transport, in response to popular concerns with growing inequalities in the society. However, the recent census results (and public comments by PM Goh) suggest that social cleavages continue to widen. The most recent census results indicated that between 1990 and 2000, the use of public transport for commutes to work lost 2.6% share while the private car gained 5.6% (Singapore Department of Statistics, 2001). Car ownership also became increasingly a prerogative of the wealthy non-HDB housing residents: the proportion of households with cars declined slightly among the HDB population, while among the residents of condominiums and private flats it rose by 7.5% and among residents of landed housing it rose by 6.7% (Ibid.) The “unequal distribution of material rewards associated with Singapore’s economic development” became a major political issue in the early 1990s (Rodan, 2001:161).

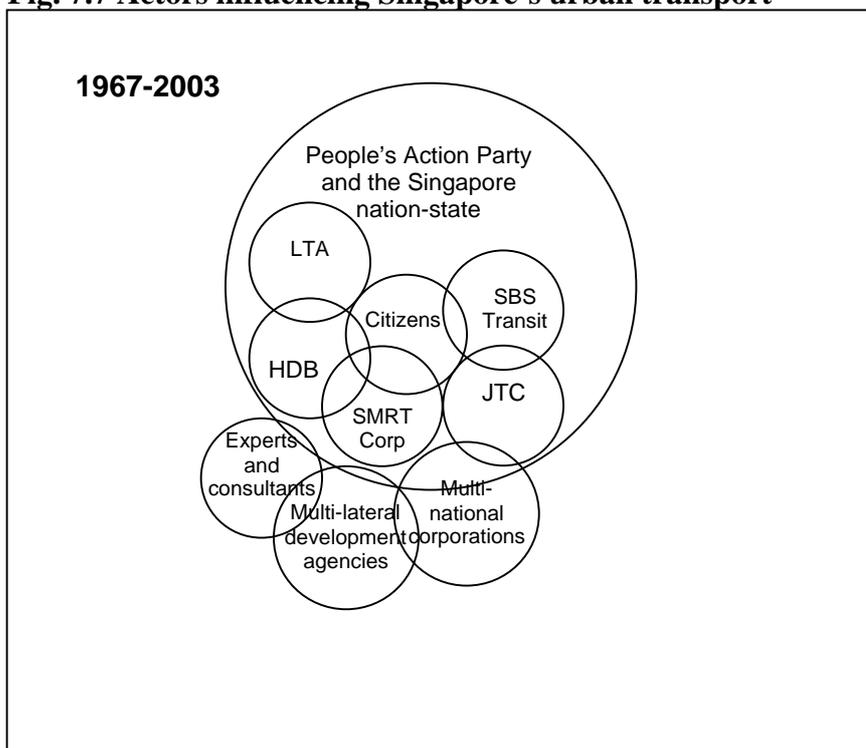
One rationale given for the emphasis on road expansion and free-flowing traffic is that it benefits bus users, although like many of the PAP state’s truisms (e.g. any amount of traffic congestion would threaten Singapore’s prosperity), it has not been subjected to critical scrutiny or objective evaluation. While politicians and planners in Singapore have often stated that building roads will not “solve” traffic congestion, the PAP-state has now begun “double decking” some roads and will soon begin building underground roads. The largest and most expensive road in Singapore’s history (Kallang/Paya Lebar Expressway, estimated S\$ 1.6 billion), including a 9 kilometre tunnel, is now under construction. Between 1996 and 2001 415 lane kilometres were added at a cost of S\$910 million. Therein lies a likely source of discontent among many of Singapore’s citizens.

## **7.6 Conclusions**

Changes to Singapore’s urban transport system have successfully led to an efficient system of movement with relatively low external environmental costs. Measures have been taken to move the majority of the population on a high quality public transport system which links employment with publicly-built housing estates, while providing ease of movement for motor vehicles used by

those who can afford high ownership and usage costs. Overall, technical planning has been highly consistent and coordinated. The changes that occurred were carefully managed by a set of actors which has remained remarkably stable over time (see Figure 7.7). At the centre of this coalition of actors was the Singapore nation-state, which was controlled by one political party and a small coterie of leaders since independence. The PAP-state encompassed virtually all actors and relationships which were highly regularized. A public housing programme was initiated by the PAP-state and executed by the Housing Development Board which worked closely with the provider of industrial estates, Jurong Town Corporation, and transportation agencies. While government agencies have changed over time (e.g. the creation of the LTA) in order to improve efficiency, their essential situation within the PAP-state has remained constant. The principal actors existing outside the state and involved in shaping urban transport were multi-lateral development agencies (principally the United Nations and the World Bank) and multi-national corporations. Multi-nationals included companies seeking to set up manufacturing operations for exporting out of Singapore, as well as companies seeking to sell transport equipment and services in Singapore.

**Fig. 7.7 Actors influencing Singapore's urban transport**



Citizens have acted as actors within the context of the PAP-state, but not through NGOs, opposition parties, or independent civil society organizations. Public satisfaction with the transport system is part of the authoritarian PAP regime's claim to legitimacy, and as a result the system is managed and improved as a national priority. Through the 1990s some careful attempts were made to allow citizens, particularly from the growing middle class, to have a greater say in changes to the transport system. At the same time, the quality and quantity of infrastructure that makes motor vehicle use easy have been increased but carefully rationed through various pricing measures. The PAP state as the overarching actor has successfully managed to meet growing social expectations of the middle class and lower income groups, while at the same time making improvements to urban transport which makes a car-owning elite better off.



## COMPLEXIONS OF INTERESTS AND URBAN TRANSPORT IN THREE CITIES

### 8.1 Introduction

The preceding case studies described and analysed urban transport changes in Bangkok, Kuala Lumpur, and Singapore. This chapter utilises the case studies to systematically identify some interests which were furthered through those processes of change. The rationale for this focus on interests emerged from the literature reviews. The first literature review (Chapter 2) found a major shift in the way urban transport is theorised. While there was once widespread acceptance of one public interest served by changes under the direction of technocratic transport planners, it is now accepted that there are many cases of changes to urban transport in which some interests are made better off and some which are made worse off. Furthermore, the question of what should be done is now recognised as inherently political and there are limits to the potential for purely technical solutions. Notwithstanding these general theoretical shifts, the review in Chapter 3 revealed that the subject of interests had not been systematically addressed in the research and literature on Southeast Asian cities. The case studies and the interpretation of the case studies that follows in this chapter explore whether questions surrounding interests can give some more unified general understanding into the nature of changes to urban transport systems in Southeast Asia.

At this point, it is important to clarify the concept of interests used in the analysis that follows. The definition of interest used is narrower than a broader interpretation of an interest as “something that one wants or that will give satisfaction” (Raphael, 1976:53) because it does not consider intangible interests such as pride or community goodwill. Nonetheless, it is wider than another definition of interests as “the methodical pursuit and accumulation of private

wealth” (Hirschman, 1986:41) because it includes environmental improvements and the physical integrity of neighbourhoods. While not necessarily rejecting the notion of a public interest, which is an ongoing subject of debate,<sup>55</sup> the focus is on specific interests which were furthered based on the case study evidence. The case studies described activities of individuals and groups and the results of those activities. The analysis that follows is based on the premise that those individuals and groups which benefited from actions they participated in were seeking to further their interests either directly or indirectly. However, the analysis avoids relying solely on the rhetoric of powerful individuals who, as one would expect, claimed that all of their actions, no matter how apparently self-serving, were actually in “the public interest.”

Identifying interests is a difficult task because people have many interests and even within small social groups there are bound to be multiple interests being pursued by the individual members of the group. The cities being studied are large and complex societies made up of millions of individuals and an innumerable range of individual interests. This analysis that follows identifies the large and direct benefits which accrued to identifiable individuals and groups who were involved in shaping activities in their interest. In most cases, it is possible from the case studies to identify “coalitions of interest” or cases in which the interests of multiple actors were served by a given action. Similarly, it is possible to show that certain interests were in conflict with other interests.

This chapter begins by providing a quantitative overview of the characteristics of urban transport in Bangkok, Kuala Lumpur, and Singapore in comparative

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<sup>55</sup> Broadly, many theorists (notably, including neo-classical economists) view society as made up of self-interested individuals and see individuals acting in their self-interest as the best way to maximise a public interest, which is the sum of all self-interests. Another philosophical perspective is that while there are self-interested individuals and groups, societal well-being or the public interest is actually the result “... not of self-interested action but of disinterested action—citizens committing themselves beyond their personal interest in order to widen the public good” (Saul, 1995:120).

perspective. Following this overview of physical outcomes, each of the cities is analysed in terms of the dominant interests and coalitions of interests surrounding specific changes to urban transport. This is followed by analysis of the three cities together in comparative perspective in order to suggest how the prevalence of different interests (in the use of land, urban transport equipment, infrastructure construction and operations, and local environmental quality) has led to different outcomes among the cities. It suggests how it is not only the prevalence, but also the relative absence, of certain interests which have been associated with different urban transport outcomes in Southeast Asia. The final section concludes the chapter by revisiting some of the suggestions about the role of interests found in the literature on Southeast Asian cities in Chapter 3.

## **8.2 Overview and comparison of urban transport systems**

The processes described in the case studies led to different physical outcomes which can be compared quantitatively. Table 8.1 provides urban transport indicators in the same year utilising the most recent available data which has been standardised across all three cities for 1995.<sup>56</sup> This data captures many inter-city differences which resulted from changes occurring in the dynamic period of the 1980s and early 1990s. In 1996, the year after the data in Table 8.1, economic growth across Southeast Asia began to slow and contraction of economies occurred in 1997 and 1998. There are indications that levels of motor vehicle ownership and usage declined in all three cities for the years 1997 to 1999.

A major change that post-dated the 1995 data was the introduction of new and expanded rail rapid transit systems in all three cities. It is not yet clear whether these cities have slowed or reversed the overall decline of public transportation's modal share in Bangkok and Kuala Lumpur. One reason is that construction of

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<sup>56</sup> The source of the standardised data is the Millennium Cities Database which was produced by Kenworthy and Laube (2001) for the International Association of Public Transportation (UITP).

high speed intra-urban expressways continued apace, particularly in Bangkok and Kuala Lumpur.

**Table 8.1 Comparative indicators, 1995**

	Bangkok	Kuala Lumpur	Singapore
<b>1. Mode split of all trips</b>			
* non motorised modes	11%	24%	16%
* motorised public modes	43%	7%	31%
* motorised private modes	46%	69%	53%
<b>2. Average time of mechanised trips (minutes)</b>			
Car trips	39	17	16
Public transport trips	49	43	30
<b>3. Motorised transport infrastructure</b>			
Length of road per urban hectare (metres)	81	88	92
Length of freeway per urban hectare (metres)	2	4	4
Parking spaces per 1000 CBD jobs	304	298	237
<b>4. Motorised transport ownership &amp; use (cars and motorcycles)</b>			
Total private passenger vehicles per 1000 persons	454	383	160
Total private passenger vehicle kilometers per vehicle	5,640	10,838	14,822
Total private passenger vehicle kilometers per capita	2,563	4,154	2,367
Total private passenger kilometres per capita	4,402	5,711	3,830
<b>5. Traffic Intensity</b>			
Passenger cars per kilometre of road	426	137	119
Motor cycles per kilometre of road	352	115	44
Average road network speed	15	28	35
<b>6. Public Transport Infrastructure</b>			
Total length of public transport lines per 1000 persons	642	1,196	1,200
Total length of reserved public transport routes/ 1000 persons	20	39	22
<b>7. Public Transport Supply and Service</b>			
Total public transport vehicle kilometres of service per capita	111	32	110
Total public transport seat kilometres of service per capita	3,740	1,331	6,593
Overall average speed of public transport	10	18	24
<b>8. Public Transport use</b>			
Total public transport boardings per capita	389	86	481
Total public transport passenger kilometres per capita	2,799	726	3,142
<b>9. Overall Transport Cost</b>			
Total passenger transport cost as share of metropolitan GDP	13%	15%	5%
Total private passenger transport cost as share of metropolitan GDP	11%	13%	4%
Total public passenger transport cost as share of metropolitan GDP	2%	2%	1%
<b>10. Transport Energy</b>			
Private passenger transport energy use per capita	11,750	11,461	10,375
Public transport energy use per capita	3,574	404	1,723
Total transport energy use per capita	15,324	11,865	12,098

Source: Kenworthy and Laube, 2001

According to the data, Bangkok stood out in terms of low non-motorised modal share (indicator 1), while Kuala Lumpur had a high share of trips by motorised private modes. While Bangkok had a high share of trips on motorised public modes, other evidence suggests that this indicated not a high quality public transport system, but rather a lack of alternatives and a large population “captive” to public buses and minibuses. The congestion endemic to all road transport in Bangkok is indicated by the long average times for all mechanised trips (indicator 2) and the high level of traffic intensity (indicator 5). Singapore had the highest level of public transport use in terms of boardings per capita (indicator 8). Singapore also had a high level of total private passenger vehicle kilometers per vehicle (indicator 4) suggesting the high cost of owning a car and relatively favourable traffic conditions led to high intensity use of private vehicles. The low overall cost of transport as a percentage of GDP (indicator 9) in Singapore reflected both the high level of productivity of the system.

### **8.3 Complexions of interests in three cities**

The case studies of Bangkok, Kuala Lumpur, and Singapore revealed unique processes, actions and actors. This section characterises the complexions of interests associated with major changes to urban transport and the urban transport outcomes in each of the cities individually and how they changed over time. In recent decades societies in all three cities grew larger and more complex, along with processes of urbanisation, industrialisation, and demographic change. The range of interests present in each of the societies also grew, although these interests were not necessarily represented by the state and other institutional arrangements. Because Singapore has been under the control of one authoritarian regime for the period studied, the complexion of interests represented by the state changed little. In Kuala Lumpur there was a shift over time although a dominant imperative of the Malaysian nation-state has been furthering the interest of ethnic Malays in economic prosperity in comparison to the ethnic Chinese. In Thailand the range of interests widened in the 1990s as greater democracy and participation were

introduced: correspondingly, interests in Bangkok were highly pluralistic and difficult to discern. While it was possible to describe the interests which have played an important role in Singapore and Kuala Lumpur over a period of over three decades, in the case of Bangkok the complexions of interests resemble “snapshots” at key periods and surrounding key actions.

### **8.3.1 Bangkok**

While in recent decades the interests influencing urban transport in Bangkok multiplied, this was not always the case. For most of Bangkok’s history, the overriding interests of all actions belonged to the absolute monarchs of the Chakri Dynasty and a small class of nobility. This situation was similar to that in Europe in the sixteenth and seventeenth centuries, when the self interests of royal rulers were “... either hidden from view, as the interest of the prince was assumed to be identical with that of his subjects, or treated as a matter of course, rather than of choice” (Hirschman, 1986:37). In Thailand, these royal interests were in investing the surplus accumulated from agricultural regions into urban infrastructure and land development in Bangkok, and into the creation of ceremonial and sacred space which reinforced royalty’s rights and legitimacy to rule. Thus, the control over physical and sacred space was directly under control of the King, who built housing and a canal-based transport and irrigation system. This system was based on non-motorised, human-powered modes of transportation and caused minimal environmental impacts and maintained a form of harmony with the natural environment of the flood plain.

This complexion of interests began to change in the nineteenth century as the Kingdom of Siam became integrated into regional and European trading networks. The Siamese Kings beginning in the late nineteenth century sought to accommodate the mercantilist interests of European nation states, particularly in ways that would support royal interests. The King at the time signed concession

agreements with European companies seeking land based movement and business opportunities. The Privy Purse Bureau under the King invested in new foreign technologies such as electric trains and streetcars which extended the spread of Bangkok.

The absolute monarchy ended in 1932, but the institutions formerly controlled by the King were transferred to civilian and military governments which did not fundamentally alter the operations of those institutions. However, in the wake of the Second World War, a new coalition of interests affecting most aspects of Thai society, including transport in Bangkok, was formed. This coalition was the result of the growing military and economic interests of the USA, which was locked in a Cold War struggle with the USSR. Thailand was viewed by the Americans as strategically important and the US formed strong links with Thailand's military rulers as well as with King Bhumibol Adulyadej. The US military had interests in building highways to link Bangkok with airfields in the north-eastern and eastern regions of Thailand, as well as in rural roads for counterinsurgency purposes in the north-eastern region. The US military, private companies, and the World Bank provided capital, equipment, and expertise for these activities, because previously road-building in Thailand had not been a major interest of the monarchs or of the post-1932 civilian governments (Caldwell, 1974). This coalition of interests also promoted the expansion of private land-ownership and industrialisation which were viewed as important in preventing the spread of Communist regimes in Southeast Asia, and also benefiting the US economy.

While promoting private sector interests in Thailand, the US advisors and the World Bank also set about creating public planning institutions and regulatory controls which would promote public, state co-ordinated infrastructure and industrial development as in the USA. However, the powerful stakeholders in Thailand did not share this interest in creating public institutions, and the King

warned against what he viewed as the dangers of creating a welfare state with public entitlements and re-distribution of income. The statutes and legal system that would have been required for a system of public planning and control over urban development were not put into place. Thus, the complexion of interests with the US military's interests extended only so far as cooperating in ways in which material interests of Thailand's elite were met, but not in ways in which material interests of the wider population would be met through increased public control over land and resources. By the 1970s Thailand was left with firms and government departments with interests in building highways and rural roads, particularly in the central and northeast regions, and a nascent industrial economy.

As industrialisation, economic growth, and urbanisation continued, levels of motor vehicle traffic congestion and air pollution increased. While public road-building, mass transit, and road-pricing programmes were proposed, the actions taken were those that served the pecuniary interests of private companies and government ministers. Rather than publicly funded programmes that could have served the interests of average people, the government pursued ad hoc road-building projects that provided short term material benefits to contractors who were either government ministers or the relatives of government ministers.

By the 1980s, the interests and presence of the American military in Thailand were largely gone, and the mercantile interests of Japan's developmental state in Southeast Asia had risen again. Japan led a wave of foreign direct investment into export-oriented manufacturing in Thailand. The Japanese government and companies planned and built transport infrastructure which served their interests in the conglomerate-led industrialisation of Southeast Asia. Thai and foreign private investors and politicians pursued profit-making investments in transport infrastructure and services which were increasingly demanded as the economy and city grew. National governments of foreign nations whose companies sought to

build transport infrastructure in Bangkok provided “technical assistance” in planning and created relationships with government officials and politicians. As bidding on projects was not through open competition based on price, personal relationships with individual bureaucrats and politicians who would take a personal interest in particular mega-projects were crucial.

Different factions within the political parties and their bureaucratic clients sought to control projects with the prospect of massive financial rewards. The main interests served were those surrounding the signing of agreements and contracts, public works contracting, and the operations of infrastructure and services for profits (i.e. through tolls and fares). While mass modes of transport were recommended from the first studies on Bangkok’s transport problems, and while the physical form of the urban area would have been suited to these modes (as well as walking and cycling) politicians did not use public money for public services. The interests of the foreign firms were in selling expertise and technology, and were helped by their governments, which arranged for various forms of low interest loans and financial support. Thailand’s individual politicians and bureaucrats who facilitated these purchases reaped financial windfalls.

Families and individuals owning land expanded their holdings and then enhanced their land values and rental income by encouraging the government to build roads accessing their land. Thus, the locations of urban transport infrastructure projects were linked to the land ownership of powerful families and individuals. The pattern of land ownership also influenced the location and types of infrastructure, which were mainly trunk roads and highways. Due to the power of landowners and their interest in maintaining profits, this limited the locations and configurations of roads because land expropriation was very difficult and required paying large sums in compensation or evicting large numbers of squatters occupying the lands. At this time, there was some growth in NGOs seeking to

represent squatters' interests in preventing eviction and security of tenure. However, there were still no groups with power to articulate collective interests which would have benefited from public control over the uses of private land.

The main focus during this boom period was on expressway infrastructure which created opportunities for Thai firms and their political patrons (or owners) with interests in road building for private profits. In contrast, rail faced more difficulties because it required a large up front investment and a long-term commitment, which was beyond the short-term interests of Thailand's fluid politicians and political parties. Bangkok's first operational rail mass transit system was made possible by a coalition of interests which included the World Bank's interest in private provision of infrastructure, and the German government's interest in loaning money for projects which provided opportunities for German companies. Significantly, this project was initiated by the BMA's first elected governor, whose interests were linked through a democratic process to those of the citizens. The project did not require public expenditure which had been the sticking point of many other proposals, and it did not interfere with the interests of landowners because it did not require land expropriation. Nonetheless, the BTS project (the first truly private rail mass transit project in the latter twentieth century) suffered problems in securing finance and construction. Most of the project's construction was undertaken under the direct and indirect leadership of one governor over a decade. However, the rail project was poorly integrated with the public bus system because there were no authorities with interests in maximising ridership of the rail and bus system as a whole.

Greater democratisation in Thailand during the 1990s led to opportunities for new kinds of leaders and politicians with business interests to further their private activities, unconstrained by regulations and laws discouraging conflicts of interest. During this period opportunities were also created for communities whose

interests were adversely affected by state projects to protest. The most successful case was that of the Baan Khrua community, which was able to link its interests in preserving their territory from destruction by an expressway to the interests of some politicians. The most recent victory of the community occurred when the property-owning family whose business interests would have been well-served by the expressway project lost power amidst the 1997-8 economic crisis. However, these community interests were not translated into laws and regulations which would constrain the activities of politicians and businesspeople seeking to maximise profits. In certain respects, conflicts between the interests of politicians in serving the wider population and in their personal business interests have escalated since early 2001 when the nation's largest business tycoon became Prime Minister. The business interests of the current PM and his family extend into urban transport and the operations of the largest private expressway operating company, and thus have a direct interest in the continued expansion of a road network serving the expressways to maximise the numbers of private motor vehicles.

At the time of writing, the primary constraint on the continued expansion of expressways and rail is the disinterest of foreign investors and financial institutions in providing capital for highly risky and potentially unprofitable projects. While Japanese and German institutions and companies expressed interest in providing low-income loans for further rail expansion, the PM and Cabinet have declared that, consistent with past decisions, they will not use public money for projects which do not generate short term cash flow to the government.

### **8.3.2 Kuala Lumpur**

The collective actions documented in the Kuala Lumpur case study were undertaken mainly by coalition governments led by one political party, the United Malays National Organisation (UMNO), and private companies. An interest

which has been pursued by these governments and some of the companies, has been raising the economic prosperity of one ethnic group, the Malays, relative to Malaysia's two other large ethnic groups, Chinese and Indians. The form of these government interventions, which have impacted on urban transport, has changed along with changes to Malaysia's national leadership, how this leadership has conceived and sought to further "Malay interests", and the interests of multinational corporations.

In the 1970s, as the New Economic Policy and the Second Malaysia Plan were inaugurated by the government, the major collective actions shaping urban transport revolved around the expansion of road space to accommodate growing fleets of public and private motor vehicles. The World Bank played a significant role in collective actions through studies, planning, training, and financing road building, in line with the World Bank's ideas about what constituted a "good" transport system (see Chapter 3). One of the emphases of the World Bank studies was on increasing the supply of competitive bus services which would utilise the road network (some of it financed by the World Bank) in ways which minimised the costs of individual bus operators. In the mid-1970s, the World Bank provided a loan to the Malaysian government to establish a fleet of mini-buses intended to increase the supply and market-responsiveness of the bus-based public transport system. The Malaysian government under UMNO Prime Minister Tun Abdul Razak utilised this loan to further his government's interest in creating "a Malay commercial and industrial community" (Malaysia, 1971) by allocating the licenses to Malay entrepreneurs while obliging the mainly Chinese operators of the existing, larger stage buses to reduce services. Thus, the convergence of the interest of the World Bank in encouraging "low-cost" (in terms of operations) and competitive bus-based public transport and the interest of the UMNO-led government in increasing participation of Malays in urban private enterprise were met. At the same time, the interests of the Chinese bus operators were

marginalised, along with the interests of the wider population using public transport which declined in capacity.

While some interests shared between the government of Prime Minister Tun Abdul Razak and the World Bank were met by the minibuses in Kuala Lumpur, there were also proposed collective actions which did not eventuate at that time because the interests of these powerful institutions with decision-making powers were not shared. One proposed action which was supported by the Prime Minister as part of an election commitment was to establish a rail mass transit system in Kuala Lumpur. However, beyond the level of study and planning, this action was not undertaken because the World Bank, one of the only sources of large investment at that point in Malaysia's development, was not interested in financing rail mass transit which was viewed by free market economists as too expensive to build and operate. While Malaysia's leadership may have supported a rail mass transit system in principle, there were no actors willing or able to commit the large funding and planning for the long-term investment. Furthermore, the government did not have an interest in using public money for investing in rail mass transit, which would be left to private companies seeking profits in construction and operation of the systems. Because there were no companies with the expertise and experience, there was an insufficient level of convergent interest to realise a rail mass transit system at that point in time.

Another action, which had been proposed in a 1973 plan paid for and executed by an American consulting firm working for the World Bank, but which was not implemented, was road pricing and restrictions on the use of motor vehicles in the central area. While Anglo-American economists were highly interested in the prospect for implementing such a system in central Kuala Lumpur, there was a lack of local interest in promoting or supporting the idea. The net result of a lack of action on road pricing and rail mass transit combined with road building and the

decline in capacity of the bus system led to an overall shift toward the use of private motor vehicles in Kuala Lumpur.

Along with a shift in the leadership of UMNO and the rise of Mahathir Mohammed to the post of Prime Minister in 1981, the complexion of actors, their actions, and interests shaping urban transport in Kuala Lumpur changed. Under the previous UMNO-led government, privileges had been granted to a national Malay community and many of these privileges led to employment in the public bureaucracy. In contrast, PM Mahathir believed that granting across-the-board welfare entitlements and privileges to all Malay citizens was creating a situation of dependency and a lack of progress. His elitist position was that selected Malays showing aptitude in large scale private enterprises should be promoted, and given privileges. However, in practice the distribution of these privileges was to Malays (and some non-Malays) with close personal and business links with Mahathir and UMNO. At the heart of this change was a shift in the conceptualisation and composition of “Malay interests”.

While collective actions shaping Kuala Lumpur’s urban transport prior to the 1980s were minimal, under PM Mahathir a number of grand schemes for Kuala Lumpur were undertaken and these had major urban transport implications. Power over collective actions shaping urban transport in Kuala Lumpur came increasingly centralised under the Office of the Prime Minister. These activities involved private corporations with interests in making profits from building and operating urban transport infrastructure and services. Private companies identified their preferred routes of expressway and rail projects, sometimes in conjunction with private land development schemes. However, these were not always profitable and the government provided some financial incentives and various forms of limited support for projects. Some opposition politicians, academics, and community representatives revealed that UMNO and some of the leaders

including PM Mahathir and Finance Minister Daim, an architect of the privatisation programme, were personally benefitting from these projects. This criticism seemed to have been validated by the granting of some transport infrastructure concessions to non-Malays with close links to the UMNO establishment and politicians.

Much private investment went into toll expressways, which generated profit-making opportunities for well-connected companies to build and operate the infrastructure. The concessionaires also had interests in residential and commercial land development, which was often bundled with expressways as complementary goods. In some cases middle class motorists opposed paying tolls and local impacts of the expressways and they articulated these interests through protests and lobbying local politicians. In response, in many cases tolls were lowered or increases were postponed by the national government, which was then obligated to compensate the private concessionaires with public funds. The lack of profitability from operating these projects suggested that it was the construction itself which was particularly important to decision-makers.

The first successful LRT project in Kuala Lumpur was initiated and implemented by a British multinational and required few state resources, such as land. The second project utilised soft loans from the government to an industrial conglomerate (Renong Bhd) owned by the ruling party and a vehicle for creating indigenous, Malay capitalists.

There was little representation or participation by actors whose interests could have benefited from integration of the uncoordinated infrastructure projects. Largely missing was some articulation of the interests of public transport users, and particularly of those using non-motorised modes. While the private, profit-making interests of companies involved in infrastructure projects dominated, there

was little emphasis on more public interests of integration of those systems. The private companies planning, constructing, and operating expressway and rail systems did not have interests in integrating the infrastructure in ways that would make travel easier and cheaper for the public. Thus, the relative absence of these interests has led to an extensive infrastructure system, which is only marginally a genuine network because the interconnections between the private systems are weak. The benefits are disproportionately towards motorised vehicles and the wealthier, as public transport services and sidewalks, which are valuable for the poor and lower income people, were made worse.

### **8.3.3 Singapore**

The Singapore case study emphasised the role of collective actions undertaken by the state, which has been controlled by one political party since independence from Britain in 1959. To an extent virtually unparalleled among cities of the contemporary capitalist world, individual and collective actions in Singapore are directed by a small clique of leaders. This party, the PAP, controls the state apparatus to such an extent that it is extremely difficult to distinguish party, regime, and government. It also controls statutory boards executing government priorities as well as government linked private corporations (including the MRT and the press), which it owns through a holding company. A range of organisations and activities (such as voluntary and independent civic organisations, business organisations, trade unions, and opposition political parties), which are commonly found in established and nascent democracies, are either highly controlled by the state or are virtually non-existent in Singapore. Under these circumstances, the interest of that party, the PAP, and its leaders in establishing and maintaining authoritarian and paternalistic rule over Singapore has been effectively merged with the day-to-day functioning of the government and society. Those actions undertaken under an authoritarian form of government are those which directly reflect their interests:

In the paternalistic type of state the public interest is no longer the summation of the interests of all the citizens, *as they themselves would see it in an illusion-free world*, but it can, and usually does, transcend it. ... In other words, the interest pursued by the governing body may diverge widely from the public interest that would result from the summation of the welfare of all the individuals comprising Society, assuming that such a summation were possible (Tanzi, 2000:5).

However, the mere existence of an authoritarian regime with an interest in maintaining their position of power and privilege is insufficient to explain the physical and social character of Singapore. The longevity and success of the PAP leaders in shaping the city and society are the results of an ability to harness their interest in maintaining authoritarian rule to their ability to meet selected and controlled material and economic interests of much of Singapore's citizens. They have an interest in seeking popular legitimacy without recourse to the threat or use of force.

In addition, the interests of multi-national corporations seeking a base for their operations both within Singapore and in the wider Southeast Asian region have been selectively met as a key component of the highly successful export-oriented industrialisation strategy pursued since 1965. In addressing the interests of these other actors, the PAP has utilised a high level of technical expertise including city planning. Capricious and ill-considered actions have been avoided, and as a result, at the time of writing the PAP regime remains well and firmly entrenched in Singapore, with little sign of change in the foreseeable future.

Mirroring wider processes of urban and economic changes, the emergence of the city's internationally-renowned urban transport system has been moulded by the PAP regime's overriding interest in first establishing, and later maintaining, its authoritarian rule. A key strategy for achieving legitimacy and control needed to maintain the regime has been the provision of owner-occupied public housing for the working and middle class inhabitants. The form of the housing and its location

established a distribution of population that has been ideally-suited to mass modes of transport for trips between home and work and for internal circulation in the housing estates by non-motorised modes of transport. The provision of the transport infrastructure serving the HDB estates has been, like improvements to the flats, tied to votes and support for the PAP.

The rapid growth of government-provided housing was enabled by legislation allowing the state to seize privately owned land for public uses with a minimum of constraints. That the PAP leaders were willing and able to implement this legislation and its use reflected the lack of interest by the middle class professionals comprising the leadership in private land ownership and speculation for profits. This is a highly unique state of affairs in Southeast Asia, where governing elites in most of the non-Communist nations either directly themselves or indirectly through families and supporters have major interests in private land ownership unconstrained by public institutions, regulations, and laws. Well-intentioned proposed policies and programmes to provide security of tenure for the landless majorities in most Southeast Asian cities have repeatedly failed in recent decades in cities like Manila. In addition, the large and impoverished rural hinterlands surrounding other Southeast Asian capital cities ensure that demand for housing will always outstrip supply. The legality of Singapore's process of obtaining private land was established by the Land Acquisition Act (1966) in which it is clearly stated that defining the public interest is the basis for taking that land and this is under the control of the Minister of National Development who cannot be legally challenged (Koh, 1967).

In addition to the interests of Singapore citizens in upgraded housing, the PAP-state used its power over the use of land to create sites for multinational companies participating in the city-state's export-oriented industrialisation strategy. Major employment locations developed by the PAP-state included a

deep sea port, international airport, industrial estates, and a downtown business district for corporate headquarters and associated facilities such as banking. The PAP leadership regularly voiced their preference for a sanitised, controlled, and manicured city resembling the downtowns and office park environments preferred by multinational corporations around the world. The clearing out of population from the central area into suburban high-rise housing estates was a highly efficient strategy to create a downtown business area amenable to the types of environments that international investors seek when making location decisions. The strategy proved highly successful as Singapore became a global business city serving the wider region. These changes have also made the central area more attractive and less polluted and a desirable site for regional headquarters of multinational companies seeking to locate in a highly efficient, clean and safe Central Business District. The high-skill, high-wage workers from these companies can reach their downtown office buildings in relative ease and comfort, either by public transport or private motor vehicle. Thus, the interests of foreign capitalists have played a large role in determining changes to the use of land in Singapore for the accommodation of multi-national enterprises. Simultaneously, the public housing programme supported the interests of private companies by providing a relatively stable and well-housed workforce which also had an interest in joining the paid labour force to pay for their new HDB flats.

The separated locations of housing and workplaces created demands for transport infrastructure which was provided by the PAP state as a means for enabling the HDB estate population to access employment opportunities. In addition, the provision of this infrastructure was made in a manner which could be tied to votes and support for the PAP. A new phase in rail expansion in Singapore is designed in such a way that the highly desired infrastructure (which is made partly attractive by problems with the operation of the bus system) can be provided to specific HDB estates in exchange for votes for the PAP. In addition to rail

infrastructure and bus services serving HDB estates, pedestrian and cycling facilities linking the stations within adjacent HDB estates have been made with funds allocated by the state to PAP representatives and “councils”, which further enhance the benefits accruing in exchange for votes. In practice, such “vote buying” is common throughout the world, but it is less explicitly and tightly controlled in other places. Due to the monitoring of housing blocks, benefits are carefully distributed or withheld on the basis of voting behaviour. What is unique in Singapore is the form that pork barrelling takes.

Much of the finance for building rail infrastructure in Singapore comes from the highest charges in the world on the ownership and use of privately-owned motor vehicles. Effectively, these collective actions under the direction of paternalistic leaders have constrained people’s urban transport choices in ways that have not emerged under democratic regimes. While these policies are often favoured by technocrats, economists, and environmentalists around the world, in most cases they remain unimplemented as a result of the opposition of organised groups with interests which would conflict with the restraints. Such strategies are also widely seen as being politically unpopular, and hence a threat to re-election in democratic societies.

Singapore’s urban transport system is the result of the specific interests of the PAP leaders (which notably did not include seeking profits from private land-ownership or motor vehicle industries) combined with the interests of the population in better housing and the interests of multinational companies in favourable conditions for export-oriented industrialisation. The material interests of the majority of the population have become inextricably linked to the interest of the PAP in maintaining an authoritarian state dominated by one political party. The PAP leaders have received financial benefits, but they are through legalised means such as high salaries: the PM earns more than the US President and the

German Chancellor combined. Due to the lack of democratic processes, the PAP regime has remained well-insulated against competing or conflicting interests from other social actors. The interests of the PAP were in many cases highly compatible with many proposed policies and plans promoting both free-flowing motor vehicles and public transport. The overall results of these policies have been relatively low levels of traffic congestion and a lower level of private motor vehicle use and higher use of public buses. Vehicles ownership in Singapore is much lower than is predicted from standard models of car ownership based on GDP or income per capita.

The actions which were taken were not the only “choices” available, as is often stated and implied, but are those which maintained the PAP’s interests in maintaining an authoritarian state under their control. The result has been a physical urban form which closely resembles Le Corbusier’s utopian vision of the contemporary city and the conduct (the absence of land speculation for profit and the need for autocratic rulers) which would be required to realise the vision. The interests of the PAP in formulating the policies have been similar to those of technocratic institutions (e.g. the World Bank) and professionals (e.g. transport planners and engineers).

#### **8.4 Three cities in comparative perspective**

While indicating some reasons why changes occurred in particular cities, at particular times, the preceding analysis leaves some central questions of the thesis unanswered. One of these questions is why successful policies and plans, where they have been proposed for all three cities, have been implemented only in Singapore. Another question is whether it is possible to draw some inferences and wider conclusions about why certain urban transport changes, such as motorisation, occur faster and more extensively in some cities rather than in other cities. In other words, are there general characteristics found in some cities which

can be used to explain circumstances in other cities, or is it just a case of every city having its own unique circumstances? This section addresses these questions by comparing five broad types of interests which differ substantially between the cities, and this variation corresponds with differences in urban transport outcomes. While arguably present in all cities, the characteristics of how these interests are played out in each of the cities is a key to illuminating differences.

#### **8.4.1 Interests in the use of land**

In all three cities previously un-urbanised lands were converted to urban uses. In Singapore, control over land was highly controlled by the PAP-state in order to provide land for housing Singaporeans as well as local and foreign corporations with interests in using the island as a manufacturing base or as a regional headquarters. The PAP-state and its leaders had few interests in increasing private gains from the use of urban land, and powerful land acquisition laws were introduced at an early stage to further the government's control over land. The PAP-state coordinated the development of the lands with the provision of high quality rail, expressway, and non-motorised transport infrastructure.

The situation in Bangkok and Kuala Lumpur differed substantially. In those cities the conversion of un-urbanised land to urban uses was carried out by private companies and individuals with few government constraints. Whereas land was state-controlled in Singapore in order to meet some of the economic interests of most of the population and multi-national corporations as a means of maintaining their interest in maintaining power in the hand of PAP, land was controlled in Bangkok and Kuala Lumpur by private landowners and public agencies often engaging in speculative activity, or seeking to gain windfall profits from the increase in the value of land.

Interests associated with the use of land have had a major impact on urban

transport. Motorisation has been facilitated in Kuala Lumpur and Bangkok by private land ownership and lack of public control over the uses of land, while in Singapore public ownership of land under the control of the PAP-state has led to a rail-focused transport system. A major difference between Singapore, the transit metropolis, and Bangkok and Kuala Lumpur, has been the relative absence of interests surrounding private land ownership and the relatively powerful land acquisition laws under control of the PAP-state. It was most extreme in Bangkok where the interests of private landowners in doing what they please with land, which in most case involves selling it for more or increasing rents, take precedence over virtually any other interest.

In Singapore, the interests of the non-elite who by the 1990s were virtually all housed in public housing estates, was tied to that of the PAP leaders. They were provided home ownership and a high level of local public amenities and environments. In contrast, the interests of the poor and working classes in the quality of their surroundings and transport were not directly tied to government performance in Bangkok or Kuala Lumpur.

#### **8.4.2 Interests in urban transport equipment**

In Thailand and Malaysia in the 1980s and 1990s, motor vehicle manufacturing became a propulsive sector in the industrialisation process which was driven by foreign direct investment, mainly from Japan. Increasing production and profitability of motor vehicle manufacturing became a major interest of national governments in Thailand and Malaysia, in contrast to Singapore where there was no manufacturing of motor vehicles. Motor vehicle manufacturing was located in peri-urban areas (Shah Alam to the west of DBKL and the Eastern Seaboard to the east of BMA) and was associated with further sprawl of those urban areas. Between 1970 and 1995, production of passenger cars and motorcycles increased by approximately 100% in both Thailand and Malaysia, and the extended

Bangkok and Kuala Lumpur urban regions were the major domestic markets for motor vehicle purchases (Table 8.2). As a result, restraining the ownership or use of motor vehicles in the capital cities of Bangkok and Kuala Lumpur, which were far and away the largest markets for motor vehicle purchases, would have seriously hampered the size of domestic vehicle markets.

**Table 8.2 Motor vehicle production in Thailand and Malaysia, 1970-1995**

Nation	1970	1975	1980	1985	1990	1995	Change 1970-1995
<b>THAILAND</b>							
Passenger cars	6,604	15,524	24,164	36,127	73,766	121,000	95%
Buses, motorcoaches	684	15,524	50,361	74,907	236,221	364,000	100%
Motorcycles	34,256	83,939	283,971	320,563	718,860	1,600,000	98%
Totals	41,544	114,987	358,496	431,597	1,028,847	2,085,000	98%
<b>MALAYSIA</b>							
Passenger cars	20,998	39,179	no data	61,162	130,908	201,005	90%
Buses, motorcoaches	6,942	9,317	no data	37,261	1,204	239	-2,805%
Motorcycles	0	95,660	no data	182,189	214,174	195,698	100%
Totals	27,940	144,156	no data	280,612	346,286	396,942	93%

Source: International Road Federation, various years

The goal of increasing production and manufacturing motor vehicles in Bangkok and Kuala Lumpur was in some respects in conflict with the goal of overall quality of life in those cities. However, the administration of the cities by local authorities responsible for local environmental quality was under the same level of government and individuals encouraging motor vehicle production and use. Thus, there was a fundamental conflict of interest in the governments, which at once had interests in increasing the production of motor vehicles nationally, while they also had some responsibilities for the quality of life within the capital cities. However, the interests in motor vehicle manufacturing were stronger and more resilient: in Thailand numerous Cabinet ministers and bureaucrats had financial interests in motor vehicle manufacturing and in Malaysia PM Mahathir personally led the national car programme through a state agency he set up. Conversely, in both cities the proposed restraint of motor vehicles was under the authority of the

BMA (which is under authority of the Ministry of Interior and the Cabinet from which it gets its budget) and in DBKL the PM directly appointed the mayor and placed the administration under the PM's office. National governments in both Thailand and Malaysia lowered the prices of motor vehicles and maintained the taxation of petrol at a very low level.

In not one of the three nations were there interests in rail manufacturing and technology: this distinguishes them from Northeast Asian nations and industrialised nations in the West where rail systems are manufactured. In all three cases, rail technology was purchased "off the shelf" from overseas and implemented in "turn key" contractual arrangements. Equipment for recently built systems in Bangkok, Kuala Lumpur, and Singapore was designed and manufactured in Australia, Canada, France, Germany, and Japan. In Bangkok and Kuala Lumpur the German and Japanese governments provided low interest loans and finance to assist their companies in securing rail contracts. In spite of the lack of interests in rail manufacturing, expansion of rail systems has been rapid since the late 1980s in Singapore and in Kuala Lumpur since the early 1990s. In Singapore the government took a financial interest in building and then operating (through a holding company) the rail systems. In Kuala Lumpur the systems were built by private companies but received low interest loans and assistance from the Malaysian government, in addition to assistance from Japan, the UK, and Germany. In Bangkok the BTS system, which opened in late 1999, received virtually no government support in implementing or financing the system.

#### **8.4.3 Interests in infrastructure construction and operation**

In Kuala Lumpur and Bangkok, interests in private profits collected through bribes, construction contracts, and operating tolls and fares were prominent among national politicians and government officials. These interests can be found in virtually every capitalist nation; however, in these cases the interests of private

profits were closely linked to the interests of politicians making decisions affecting urban transport. In Thailand, many Cabinet ministers were affiliated with construction companies owned by them or their families. In Malaysia, through policies designed to encourage Malay participation in business, a number of road building firms were linked to the ruling party under PM Mahathir. The processes by which these companies were awarded contracts was not through competitive bidding and was not open to foreign firms, although in many cases (particularly where projects were linked to loans from overseas) they were paired with foreign partners. In contrast, in Singapore the PAP and its executive did not have direct stakes in construction companies, and bidding for projects was competitive and based on the lowest cost, although in the construction of the MRT some incentives were given to foreign companies pairing with Singaporean firms.

The lack of government support for transport infrastructure development in Bangkok and Kuala Lumpur extended beyond planning, financing, and building the systems. The projects undertaken were not coordinated by the Bangkok and Kuala Lumpur governments, which did not have an interest in the public benefits that would accrue. In Kuala Lumpur, middle class motorists complained about tolls, and the government made concessions by lowering the toll rates or postponing increases and then compensating the companies. However, the government under PM Mahathir showed no interest in changing this approach and made great efforts to publicly rationalise the private infrastructure approach. The profit-led transport infrastructure approaches in Bangkok and Kuala Lumpur also influenced the types of projects, which tilted in favour of wealthier motorists.

In Bangkok and Kuala Lumpur, there were weak or non-existent interests in the integration of systems because there was no institution responsible. In addition, differences are reflected in the relative role these rail projects have come to play in each of the cities' transport systems. In Singapore, rail infrastructure has come to

play a steadily growing role as part of a transport system which also includes extensive bus networks and facilities for pedestrians and cyclists. These facilities and physical infrastructure, along with the way they are integrated have contributed to increasing the relative attractiveness of public and non-motorised transport during a period of rapidly growing wealth. In Bangkok, a limited amount of recently operational rail infrastructure carries a relatively large number of passengers per kilometre, but low given the population of the city and limited extent of the route. Because of poor coordination and lack of government and political support, the rail competes with state and informal bus services and is not available to a large number of the population who cannot afford the fares of the privately built and operated system. In Kuala Lumpur, an extensive amount of rail infrastructure (in per capita and absolute terms) has been built in the 1990s until the present. However, the systems are poorly integrated in terms of fares or physically, and the buses have not been re-organised to work in conjunction with the rail system. In both Bangkok and Kuala Lumpur, non-motorised transport is highly marginalised and the physical difficulty of reaching some rail stations reduced the effectiveness of the whole system. Overall, rail infrastructure in Singapore has been developed in such a way that it has contributed toward increasingly attractive public transport while in Bangkok and Kuala Lumpur the impact has been more limited, in the case of Bangkok, partly because of the sheer size.

#### **8.4.4 Interests in local environmental improvements**

Interests in local environmental quality were present in all three cities, but differed in how this interest was articulated. In Singapore, local environmental quality for the mass of the population and for multi-national investors and their employees was provided by the PAP-state as part of a strategy for raising economic growth and standards of living. Local environmental improvements in the city-state were distributed as a form of political patronage in exchange for votes. In Bangkok and

Kuala Lumpur, local environmental quality was an interest addressed by private companies which could make money from selling housing in green suburban settings and creating private pedestrian spaces in shopping malls. However, these improvements in local environmental quality for those who could pay were achieved at the expense of the wider environmental quality. That is because the buyers of suburban housing and users of air conditioned privatised space generated a disproportionate share of pollution. While in Singapore the net environmental quality improved amidst economic growth and industrialisation, in Bangkok and Kuala Lumpur local environmental quality was improved for those who could afford to pay, but overall the quality of local environments across the city deteriorated. This was particularly the case in Bangkok, where the high density meant that the negative impacts of private motor vehicles used to link destinations in the sprawling city were highly concentrated.

In Singapore, the interest of a large part of the population in relatively high quality of local environments was articulated by the PAP leaders who tied improvements to votes and as a general symbol of their ability to deliver public goods. In both Bangkok and Kuala Lumpur interests in environmental quality were not articulated by the leaders. In both cases the local authorities (DBKL and BMA) attempted to implement measures which would have reduced the environmental impacts of motor vehicles, but in both cases the authorities were too weak compared with the national politicians who were more interested in increasing markets for motor vehicles and building transport infrastructure.

In Bangkok and Kuala Lumpur, responses to air pollution have been consonant with the interests of motor vehicle manufacturers in increasing sales and use of motor vehicles. The overall approach was amenable to that pursued in automobile dependent American cities, where motor vehicle emissions have been reduced through the introduction of cleaner vehicles and technological fixes, rather than

through reducing the numbers or use of motor vehicles. In both cities the US government sought to sell expertise and goods associated with “clean air” not through managing the number of motor vehicles or improvement of public transport and non-motorised transport, but through the technological and fuel-based improvements. The United States-Asia Environmental Partnership teamed up with Japanese and US automobile manufacturers and the multi-lateral development banks to promote this approach through the Clean Air Initiative for Asian Cities.

### **8.5 Conclusions**

On a certain level, there were many similarities between all three of the cities, in which collective actions included expanding existing transport infrastructure, creating new supply of transport infrastructure, changing the location and distribution of activities, and changing the relative costs of various modes of transport. The actors participating in these collective actions included, but were not limited to, politicians and political parties, local small scale private enterprises, multinational corporations, universities and academic institutions, technocrats and planners. They also included local neighbourhood associations and community-based organisations, multi-lateral development banks and the development assistance agencies of industrialised nations, non-government organisations and organised protest groups, and government agencies at levels ranging from the local to the national. In all three cities, pork-barrelling was prevalent: government resources were targeted to key individuals or groups as a means of securing support or patronage. However, the form that pork barrelling took in each of the cities was influenced by the social structure and the distribution of power.

Coalitions, intersections, and sharing between interests were important determinants of actions taken. Thus, even though actors may have been pursuing similar interests in each of the three cities, the mere existence of these interests did

not translate into actions unless there were other actors pursuing complementary interests. This was illustrated by the example of the World Bank, which employed experts, mainly economists, with similar interests in each of the cities where they proposed forms of government pricing of motor vehicle use in order to more efficiently utilise infrastructure. In the case of Singapore, the PAP leaders had a well defined and narrow set of interests in creating widespread economic prosperity while maintaining autocratic control; they created a political system in which it was difficult for other social groups or individuals to articulate any different interests. Notably absent were interests associated with the manufacture and sale of motor vehicles, thus increasing the cost of owning and using motor vehicles contributed greatly to public revenues and helped to create high quality local environments which could be used to further consolidate political power. Groups that in other places typically opposed such measures were either weak or absent. However, in Bangkok and Kuala Lumpur these measures were not implemented as there was no interest of government officials with the authority to make decisions in slowing motorisation. On the contrary, they were generally seeking to increase car ownership and use at a national level.

This interest-based approach offers an alternative conceptualisation to more technical explanations which suggest that autonomous individuals and institutions pick and choose transport policies and plans as part of a grand strategy or vision. Instead, it suggests that policies and plans proceed to implementation when coalitions of interests are served by the actions.

While Singapore's success in implementing plans and strategies restraining motorisation is often portrayed as the result of "political will" or as a technical feat, this dissertation suggests that it is the relative weakness or absence of actors articulating interests which would conflict with these measures (eg. interests of middle class people in owning and using cars, interests of automobile

manufacturers and retailers in increasing the sale of automobiles), which explains their successful implementation in Singapore. Even the Automobile Association of Singapore, accepted that “there was no alternative” to road pricing, which was defended as “an effective usage-based mechanism” (Ramachandran, 1997). This “co-operation” is in turn the result of overt and powerful political control over potentially dissenting sectors of Singapore society.

Ultimately, the complexion of interests derives from the composition of the society. The qualities of interests were related to which individuals and groups held power and how they exercised that power. Composition and affiliations among groups, individuals, and organisations in particular cities have affected urban transport changes, design, timing, modes, relative attractiveness of public and private transport and non-motorised transport. Many of the proposed “technical” measures proposed in policies and plans would have conflicted with the interests of powerful individuals and groups.



## CONCLUSIONS AND IMPLICATIONS

### 9.1 Introduction

While cities based around human and animal powered transport have existed for thousands of years, peoples' movements in cities have been transformed over the past century. Until the late nineteenth century, all cities were based around walking as the dominant mode of transportation. The distances that could be travelled in one day and the physical spread of cities and activities were constrained. However, the invention of new technologies, first the steam tram and train, then the electrically-powered tram and train, and later the internal combustion engine-powered motor vehicle, greatly increased mobility, and the size of cities. The levels of mobility in some of the world's cities, particularly those in North America and Australia (and followed by Western Europe) have continually grown. There is now a large global disparity between hyper mobile, automobile dependent cities and hypo mobile cities, where much of the world's population lives.

More recently, the size of this global hyper mobile elite expanded as rapid motorisation occurred in many cities of the developing world, particularly in Asia's high growth, industrialising economies. During the 1980s and 1990s, motorisation increased rapidly in a number of large cities in the Southeast Asian region. In Bangkok and Kuala Lumpur, the urban transport systems became extensively oriented toward private motor vehicles, including motorcycles, while the importance and use of buses and non-motorised transport declined. At the same time, new rail systems were introduced in all of the large Southeast Asian cities during the 1980s and 1990s. Singapore's transport system was effectively re-oriented toward rail and the use of public transport while the use of motor vehicles remained relatively constant. The research undertaken for this thesis was

guided by a desire to better understand the dynamics of transport change in the large capitals of the rapidly industrialising and growing economies where the most profound changes occurred. The recent experiences of the cities of Southeast Asia were revealing because processes and outcomes differed markedly between particular cities during the same period, in effect creating a form of “controlled experiment.”

The conclusions that follow are structured in sections which correspond with the five research questions posed in Chapter 1 of the thesis: 1. Why does urban transport change? 2. How have changes to urban transport in Southeast Asian cities been theorised? 3. Is there a theoretical approach which can explain changes within and differences between Southeast Asian cities? 4. Why have urban transport outcomes varied so widely in Southeast Asia? and 5. What are the implications of the findings?

## **9.2 Why does urban transport change ?**

The research began by reviewing established theories about urban transport. In particular, it examined why the relative shares of travel by non-motorised, rail, and motorised modes change over time and vary between cities. This review found that as physical and technological changes to urban transport occurred, so too did ideas and theories. It also found that expert opinion became increasingly divided, and reflected some fundamental disagreements over values, particularly the value of motorisation. But this shift was about more than just academic disagreement: it also reflected the rise of community participation and challenges.

This lack of consensus among experts and challenges by communities were not always prevalent. In the 1940s and 1950s, an authoritative body of knowledge and discourse coalesced around explaining the accelerating process of motorisation in cities of the US and other industrialised nations. The growth of motor vehicles was

viewed as an inevitable component of linear progress, or modernisation. The mechanism explaining rapid growth in the ownership and use of private motor vehicles was seen as individual consumer choices in a free market context. As incomes rose, people purchased motor vehicles and moved to lower density, suburban locations, and it was postulated that private motor vehicles and suburban homes were complementary and superior consumer goods. It was believed that the cumulative decisions of consumers and the processes of motorisation and suburbanisation were together in the public interest.

The legitimate role of governments, according to this perspective, was to facilitate these consumer choices by providing roads and removing any impedances such as streetcars, slow-moving vehicles, and non-transport activities. It was also to solve problems related to the increase in motor vehicle traffic. A technocratic approach for governments was provided by Urban Transport Planning, a standardised model and set of techniques designed to facilitate and accommodate motorisation and suburbanisation. Many of the premises guiding these technocratic approaches were based on reductionist analysis. For example, it was argued that free flowing traffic would reduce energy use, and spreading out cities would reduce the concentration of air pollution and traffic congestion.

However, these measures were not entirely successful, particularly in the USA where they were most assiduously implemented. To the technocratic proponents of motorisation and Urban Transport Planning, the reason was that the legitimate actions of governments in promoting road building and motorisation were impeded by well-connected individuals or groups referred to as “special interests.” These special interests, or rent-seekers, used political processes to thwart technically correct plans for the operation of motorised and suburbanised cities. These illegitimate activities included the retention or even expansion of rail facilities and the prevention of competitive bus-based public transport. Overall, they served to

distort the functioning of markets and prevented the implementation of technically optimal solutions to meet the accepted desires of people to live in suburban homes and use private cars for all their travel needs.

This interpretation was not shared by all. As problems generated by motor vehicles grew in the US in the 1950s and 1960s, criticism of the conventional wisdom of consumer choice and Urban Transport Planning emerged. Many of these early criticisms were directed at immediate impacts such as the displacement and environmental degradation of established urban neighbourhoods by fast motor vehicles. They argued that the problem was too much motorisation, which was disadvantaging women, inner city residents, and marginalised social groups: those who lacked access to automobiles while at the same time suffering hardships from the motor vehicle use of others. The “winners” were identified as automotive interests, road lobbies, and developers of suburban land. It was suggested that corporate enterprises which sought profits through selling urban transport equipment and services related to automobiles encouraged declines in the quality and quantity of facilities and environments that supported public and non-motorised modes of transport in order to increase the ownership and use of motor vehicles. These concerns gained momentum as public transport continued to decline and energy crises occurred in the 1970s. Concern also grew about the unsustainably high use of non-renewable resources which compromised interests in use of resources by future generations.

In the 1980s and the 1990s, perspectives critical of motorisation gained ground as the discourse of sustainable development, or concern with the interests of future generations, came to the fore. While in the early phase of motorisation there was an authoritative body of knowledge, it has become less consensual and less technical. The dissonance that now characterises theoretical knowledge about urban transport is linked to the undermining of the concept of a unitary public

interest served by technical, “value-free” planning approaches. Whereas there was once consensus, there is now disagreement over which actions are “good” and which ends are desirable. There is also doubt that transport planners are capable of finding the public interest and designing changes to reach that public interest. At the heart of this change is the loss of the “public interest” as a shared ideal and subsequent debate over which interests and whose interests should be served. There is now general agreement that these are not just technical issues, but also involve political questions concerning whose interests are furthered. While there is less consensus in explaining why urban transport changes, there is general agreement that values play a role in how things are interpreted.

In answer to the question, why does urban transport change, the answer depends on the values of the researcher or the respondent. From the point of view of those who see motorisation as good, it is the free choices of individuals which lead to changes, and rent seekers or special interests which prevent solutions and the accommodation of motorisation, leading to sub-optimal outcomes. From the point of view of those who view too much motorisation as destructive, it is through the actions of automotive interests and lobby groups that transport choices are reduced.

### **9.3 How have changes to urban transport in Southeast Asian cities been theorised?**

The review of the state of knowledge about urban transport in general is followed by a more focused literature review intended to answer the question: how were changes to urban transport in Southeast Asian cities theorised? The literature search revealed that while massive changes took place in Southeast Asian cities, research on these changes was limited in terms of volume and scope. Much of the research was concerned not so much with how changes came about than with narrower, technical issues surrounding the definition and solving of immediate

problems. The definition of problems and solutions reflected the specific interests of the researchers and institutions carrying out the research. Much of it was executed under the auspices, or with the financial support of, institutions from industrialised nations with interests in large-scale rail and road infrastructure projects. The literature also focused on the role of formal plans, policies, and government institutions, to the exclusion of describing informal channels of influence which were evidently prevalent in many Southeast Asian cities. In addition, it did not critically reflect on the interests of the multi-lateral development agencies, private corporations, and governments from industrialised nations that directly and indirectly sponsored the research.

As around the world, proponents of motorisation saw the increase in motorisation as the result of increasing income and consumer choices. The severity of problems such as traffic congestion and air pollution were attributed to the inability of governments (often because of rent-seeking) to better accommodate the increasing numbers of motor vehicles. Problems resulting from motorisation were viewed as technical matters to be managed by experts through technological improvements to motor vehicles, vehicle inspection and maintenance programmes, and less polluting fuels for motor vehicles. A great deal of attention was placed on comparing the relatively low proportion of urban area used for road space in Southeast Asian cities and this abnormality or deficiency was measured in comparison to American cities. On the positive side, the motorisation proponents found in Southeast Asia a highly competitive, informal sector of paratransit which they had advocated for the US and developed nations. At the forefront of this research were the ADB and the World Bank, multi-lateral development banks which sought to promote road-based urban transport, regulated competition between bus operators, road pricing, and greater private sector participation in the finance, construction, and operation of transport infrastructure.

In contrast, another major body of work on Southeast Asian cities argued that motorisation was the fundamental problem. While some of these researchers were critical of motorisation around the world, others were not opposed to motorisation *per se*, but argued that it was problematic in high density cities such as those in Southeast Asia. Some of these “pro-restraint” theorists viewed inappropriate planning methodologies as causes of excessive or “forced” motorisation. Others argued that plans and policies involving restraint and transport demand management were “correct,” but the problem was with implementation and lack of “political will,” uninformed decisions, or institutional fragmentation.

On a general level, the pro-motorisation and pro-restraint research on Southeast Asian cities shared certain characteristics. One was that the observed processes were inferior and decision-making or politics impeded and subverted the goals of the technical plans. Interests received some cursory acknowledgement as impediments to the implementation of preferred policies and plans. However, there was little systematic analysis or debate over the role of interests which were furthered through the processes of change. Notably absent from the research on Southeast Asian cities was evidence of bottom-up critiques and interpretations by communities opposed to state projects or local critics of motorisation. In addition, both the pro-motorisation and pro-restraint research didn’t analyse the prevailing power structures and questions such as which individuals or social groups benefited. They did not acknowledge that there were powerful stakeholders with interests in massive financial and political gains which would not have been realised by ideal public policies, plans, and institutional coordination. Not only that, but the chaos, inefficiency, and pollution facing most of the populations in many Southeast Asian cities were linked to the “solving” of urban transport problems of elite and middle class drivers.

In answer to the question, the changes have been theorised as the results of consumer choices to purchase automobiles, while problems have resulted from the inability of governments to facilitate those choices. Some research looked critically at these claims and viewed government inactions on restraining motor vehicles and improving public transport as a problem. Overall, however, the explanations of changes have been incidental to the formulation of plans and other prescriptive measures to solve problems defined by selected research institutions. This technocratic analysis had limited utility in explaining why different levels of motorisation emerged in Southeast Asia, although ad hoc suggestions were made that vested interests had subverted plans and policies, and Singapore's success was based on the lack of "politics".

#### **9.4 Is there a theoretical approach which can explain changes within, and differences between, Southeast Asian cities?**

The reviewed literature was insufficient to answer the questions which motivated the research, and as a result a novel approach was required. While the reviewed material did not provide answers to the questions motivating this thesis research, the process of reviewing the literature revealed a gap. Explanations focusing on the role of beneficiaries or interests have come to play an important role in overall theories about urban transport, but were generally absent or poorly developed in the literature on Southeast Asian cities. Thus, the mandate of this research became to approach the research questions about changes and differences in Southeast Asian urban transport by examining actors and their interests.

The theoretical approach used in this thesis was distinguished by a number of features. One was that the research focused on explaining what actually happened, as opposed to describing idealised processes. Another was that it analysed the cities, not as monolithic entities with aggregate statistics abstracted from context,

but as case studies in which context played an important role in explaining changes. The actions of individuals, groups, and institutions within the three individual case study cities were described and analysed.

The approach was to methodically identify specific actors and their interests which were furthered by processes and outcomes in the three cities. The specification was necessary, because without it the analysis of interests can become a form of truism or tautology. Just like “culture” or “politics”, “interests” without in-depth research and description can be used to explain everything and nothing. The value of the approach which was followed was that it could explain what happened in the past, given a certain amount of contextual information. It is not, however, predictive science, though it can, given an existing context, suggest likely or unlikely scenarios in the future. This could also provide information that may help policy-makers or planners in formulation of strategies.

While each of the cities had a unique complexion of interests, emerging from the unique societies and histories, certain patterns were identifiable. This suggested that in response to the research questions, focusing on interests has successfully provided a wider theoretical framework for examining changes to urban transport. In each of the cities the particular complexion of interests explained particular characteristics. It suggested that changes offered benefits to those in positions of power and many of the outcomes in Southeast Asia were congruent with a relatively powerless mass population. Individuals and groups which can reap financial rewards from actions such as building road or rail infrastructure will have greater influence than those where benefits are diffuse.

## **9.5 Why have urban transport outcomes varied so widely in Southeast Asia?**

A unique complexion of interests was found in each of the cities. In all three cities democracy, or rule in the interests of the citizenry, and civil society, were weak. All three case study cities went through periods of authoritarian rule. While all cities had coalitions of interests, it was the complexion, or makeup of the coalitions that have influenced transport changes and determined the overall outcomes. In each of the cities, the dominant interests were identified and the case studies described the complexion of those interests. The case studies then discussed how those interests influenced changes and the outcomes in each city.

In Singapore, the rulers had no interests in private land or construction companies, and a highly efficient urban transport system integrated with housing and industry became an important interest of the ruling regime. When the PAP leadership came to power they lacked land and capital, and the urban transport system together with public housing served a strategy of building support. There was a relative absence of lobby groups or interest groups to challenge or pressure the PAP-state. For example, vehicle restrictions and road pricing were not opposed by groups with interests in making profits from the manufacture and use of automobiles. To some extent, the experience of Singapore supported the view of economists and some planners who viewed the absence of “politics” or “rent-seeking” and the level of “political will” as influencing urban transport. While Singapore’s urban transport system has shortcomings and is dependent upon a considerable level of authoritarian, paternalistic leadership, the material interests of most citizens have been met to a certain extent through public housing and a high quality urban transport system. However, the way that these were met was tied to votes and support for the absolute control of the PAP-state. The PAP leaders have obtained legitimacy from their actions, although it was difficult for groups outside of the state apparatus to meaningfully influence changes. The PAP leaders sought to

portray themselves in much the same way as many technocratic planners have in the past, as arbiters of a public interest free from politics and the claims of vested interests. However, the PAP leaders receive benefits such as high salaries that are a legal reward that would likely not be so large under a democratic regime.

While Singapore has been ruled by one regime since independence using often authoritarian and coercive measures, in Bangkok and Kuala Lumpur there were also authoritarian regimes at various times. However, the character of those regimes and how they maintained power varied.

In Bangkok, there were numerous private beneficiaries of motorisation and suburbanisation. While the urban form may have been suited to rail, and there were numerous opportunities for obtaining favourable financing from countries seeking to sell rail equipment, there was a lack of local interests in rail construction. The existence of extensive interests in road-contracting was a legacy of US involvement in Thailand. In particular, land developers and infrastructure contractors associated with road building were well represented in the government. Although motorisation had large negative impacts on life in Bangkok, there were only very weak mechanisms for representing interests in things like clean air and environmental quality. Most changes were those which satisfied interests in relatively short term private profits for key individuals and families. While rail could have helped address some other interests, it had great difficulty in implementation. While plans and decisions of government officials supporting rail mass transit proliferated in Bangkok, the power and authority to commit state resources to the large expenditure involved were elusive. In Thailand, a fundamental barrier to the development of rail mass transit infrastructure has been the “mismatch” between the long-term character of rail investment, which requires centralised institutions and Thailand’s political system. When rail was finally built it was when it did not impinge on the interests of land owners and did not require

public funds which could not have been used for financial benefits to politicians or bureaucrats. These impediments to rail reflected more generally the problems of mobilising collective actions for collective goods in Thailand.

In Kuala Lumpur, there were similarities with Bangkok, although under more centralised and authoritarian leadership for an extended period of time. Like in Bangkok there was weak representation of interests in local urban environmental quality. The dominant interests have been those of UMNO under PM Mahathir, and included attempts to create Malaysian multinational private infrastructure companies and a national car industry. The government was so dominated by overriding interests in privatised infrastructure contracts for well-connected firms that the infrastructure doesn't work well and there are conflicts of interest between moving cars and trains in the same corridors.

#### **9.6 What are the implications of the findings?**

The research revealed that urban transport was influenced by actors and processes which were not examined in depth by most of the literature on Southeast Asian cities. An implication of this finding is that more needs to be known about the actors which reap benefits from changes to urban transport, and those which suffer from negative impacts such as evictions, and exposure to air and noise pollution. The value of this research is in identifying the particular complexion of interests in Southeast Asian cities, and linking these to the present situation and past changes. This research has indicated that these interests are fluid, and are tied to how power is held. The types of interests which prevailed in each city reflected the structures of power and influence in each of the societies. The types of interests were related to the larger system of governance, political legitimacy and power structures.

The findings suggest that the interests of the powerful shape actions which are taken and create constraints on what types of techniques or technical measures are likely to be implemented. There are limits to what policy-making and planning can achieve. While illuminating our understanding of how changes have occurred, this approach suggests limitations on what plans and policies could achieve, if they conflict with the interests of those with power.

However, the prevailing distribution of power and interests in the recent past do not mean that it will not change in the future. While little change has occurred in Singapore since the PAP regime took power, some changes have occurred in Bangkok and Kuala Lumpur. One recent shift which will affect urban transport was that many middle class citizens and communities have begun to criticise the business, profit-making interests of some political leaders. In the wake of the 1997 financial crisis, many companies previously involved in land and infrastructure development have lost power and some of the formerly intimate and privileged relationships with political leaders were broken.

The practical value of this type of political analysis is that it can be used to better inform policies and planning and suggest which types of plans would be more easily implemented. It can also be used to influence the decisions of those in power or by activists. Most of the use of the analysis of interests surrounding road-building and automobile industries in Anglo-American countries has come from opponents seeking to expose the actions of decision-makers and seek to alter outcomes.

One shortcoming of the research is that it emphasises the more obvious and easily identified and quantified material benefits, or economic interests which accrue from urban transport. These are the types of projects and actions which are likely to be the preserve of “heroes” or “great leaders.” However, there are a great many

actions shaping urban transport that are undertaken by often unacknowledged “champions” or small communities which seek not windfall financial rewards or personal glory, but cooperation and the creation of convivial neighbourhoods and a high quality of life. These also represented interests such as pride and a warmth of community. These constructive, community interests are lost in this type of analysis. If interests are in individual economic gain and social status, then these are disinterests.

Another implication that has not been directly addressed is that there is limited transferability of technical measures, which ultimately arise from complexions of interests in specific localities. For example, as long as governments and individuals with power in governments have interests in motor vehicle manufacturing at the same time as local representation of quality of life of city dwellers remains weak, there is little hope of restraining motorisation in cities. That is, the formulation of plans and technical studies under public agencies to find the “correct” answers to urban transport problems will serve little purpose where coalitions of interests can effectively subvert anything that is not in their own narrow interest, as opposed to broader, multiple public interests.

### **9.7 Conclusions and suggestions for further research**

The dynamics of change and the results of recent transformations in cities of Southeast Asia’s high growth, industrialising economies have received meagre scholarly attention. This has been particularly the case when it comes to urban transport, which has been mainly the preserve of technical study. And yet, experiences from this region have been, and will continue to be, dynamic and compelling subjects for study. This thesis has examined a small portion of a large and complex subject that demands further attention. Overall, this thesis suggests that there is a mandate for further examination of political and distributional questions which have been routinely avoided by the prevalent instrumental

approaches. There is a need for more independent analysis which questions the distribution of benefits and costs of changes.

Changes to urban transport in some of Southeast Asia's large cities, including Bangkok, Kuala Lumpur, and Singapore, have taken quite different forms. Nonetheless, in all three cities, as in cities throughout the region, total mobility has increased, although this thesis suggested that the social distribution of this mobility has been uneven. Changes to urban transport, including rising mobility, is now occurring on a massive scale under different types of societies and different types of political regimes. There is great potential for research examining the links between the form of transport and land use systems and the form of politics as a basis for comparative analysis. On a global scale, the private automobile and the motorcycle continue to play a larger role in cities. However, these changes are occurring in cities which are larger and more densely populated than other cities around the world. It is not entirely clear whether they will become cities in which hyper-mobility for the majority of the population is the norm. At present, there are hyper mobile, automobile dependent minorities in each of the cities, including Singapore.

Through the Singapore case study a clear link was identified between the dominant actor (the PAP-state) and the social classes comprising Singapore's population. The state provided a high level of motorised private mobility for the elite who could afford to pay, while at the same time provided high quality public transport and good conditions for non-motorised transport for the lower classes.

Increasingly sophisticated measures have been taken to meet the growing demands of an upwardly mobile middle class. In contrast, the links between the elite actors and lower classes in Bangkok and Kuala Lumpur were less easily discernible. What the case studies suggested was that the cities were being controlled from above by elites with little connection to the lower classes. There is a need for more research

that would more clearly reveal if and why the majority of the population, belonging to these lower classes, accept poor quality transport and high public expenditures on systems that make them worse off in many respects.

As cities in the developing world continue to grow and industrialise, the recent urban transport experiences in Southeast Asia, situated adjacent to both India and China, could contribute to a greater understanding of ongoing and future changes in other cities of the emerging industrial and capitalist nations of the world. While the experiences of cities in the industrialised nations of North America, Japan, and Western Europe are relevant, some features of Southeast Asia's large cities in the late twentieth and early twenty first centuries are arguably more pertinent to the emerging experience of cities in the "late industrialising" nations.

As with most changes, there are people and social groups who will benefit and some which will suffer from changes. Who holds power, and how that power is exercised will have influences both globally and in specific urban localities. For some, the rise of motorisation and hyper mobility will result in a future that is less physically demanding with more material rewards and higher standards of living. For others, it will mean further marginalisation and impoverishment in increasingly polluted environments. The notion of a public interest will continue to be called upon by powerful individuals seeking to further more narrow interests. Whether interests of other groups such as those without access to motor vehicles are furthered will influence transformations of urban form and transport in the future is uncertain. However, global concerns about sustainability which is inherently about inter and intra generational equity will demand greater attention.

# APPENDIX 1

## FIELDWORK DIARY

### **Bangkok**

- 28 July 2000 Meeting with journalist from *Asian Business*.
- 19 July 2000 World Bank/ National Economic and Social Development Bank seminar on cities and liveability in Thailand. A part of the process of preparing Thailand's ninth national five year development plan.
- 9 August 2000 Phone discussion with representative of the Asian Coalition for Housing Rights, a NGO helping low income communities fight evictions.
- 23 August 2000 Meeting at AIT with member of 1971-75 German Bangkok Transport Study team.
- 24 August 2000 Meeting at the United Nations Economic and Social Commission for Asia and the Pacific, Division of Transport and Tourism regarding "Sustainable Traffic and Transportation Development" being carried out with the Bangkok Metropolitan Administration and the Royal Netherlands Government.
- 18-21 Sept. 2000 Asia Pacific Conference on the Future of Infrastructure for Governments, supported by International Union of Local Government Authorities, Asia Pacific Section, Jakarta, Indonesia. The conference opened with a speech by a Deputy Governor of the Bangkok Metropolitan Administration (BMA) and included participation by BMA officials. A meeting and briefing was held from the viewing deck of Bangkok's tallest building on the subject of the BMA's transport projects and plans. I presented a paper on urban transport infrastructure development in Southeast Asia.
- 6 October 2000 Meeting at State Railway of Thailand (SRT) office with a union official.

- 15 October 2000 Attended a ceremony at mosque in Baan Krua, a Muslim community threatened with eviction for an elevated expressway. In addition to the local community, other invitees included activist Thai academics studying and advocating on behalf of the community, the former head of the Thailand Development Research Institute and chair of a public hearing into the project, and the second secretary of the Embassy of the Islamic Republic of Iran.
- 18 October 2000 Seminar at Chulalongkorn University on World Bank/Ministry of Finance project to strengthen property valuation in Thailand.
- 25 October 2000 Meeting at office of Bombardier Transportation
- 02 November 2000 Meeting at Bangkok Mass Transportation Authority
- 06 October 2000 Meeting at State Railway Union Headquarters
- 01 December 2000 International Symposium on “Sustainable Mobility Strategy for Mega Cities”, Organized by the Office of the Commission for the Management of Land Traffic, Mobility Research of the Alliances for Global Sustainability (University of Tokyo), Asian Center for Transportation Studies (Asian Institute of Technology, Bangkok). Lectures given by Japanese academics and representative of the Japan Automobile Manufacturers Association to an audience including Thai government officials from transport agencies, Thai and foreign academics, and representatives of multi-lateral development agencies.
- 16 January 2001 Meeting with Bangkok-based consultant working on rail project with Office for the Commission of the Management of Land Transport (OCMLT).
- 2 February 2001 Meeting at offices of Chotichinda Mouchel Consultants Limited regarding Mass Rapid Transit Authority (MRTA) subway project.
- 12-14 February 2001 Attended “Clean Air Regional Workshop Fighting Urban Air Pollution: From Plan to Action”, held at UN Economic and Social Commission for Asia and the Pacific, organized by the Bangkok Metropolitan Administration and co-sponsored by The World Bank, Asian Development Bank,

the Governments of Japan and the Netherlands, and Ford Motor Company through the Clean Air Initiative in East Asian Cities. I observed the inaugural meeting to establish the Clean Air Initiative in East Asian Cities.

- 19 February 2001 Meeting with Bangkok-based private consultant who had worked on transport infrastructure mega-projects in Bangkok, Hong Kong, Kuala Lumpur, and Singapore.
- 27 February 2001 Meeting at the Expressway and Rapid Transit Authority of Thailand (ETA).

### **Kuala Lumpur**

- 8-10 November 2000 Regional Policy Seminar on Transport and Communication Challenges for Urban Local Governments in the 21<sup>st</sup> Century, sponsored by the UN, City Net (a joint programme between the World Bank and the UN), Kuala Lumpur City Hall, and Citynet. Included Visit to offices and control centre of private highway concessionaire LITRAK and to the Multimedia Super Corridor development South of Kuala Lumpur. The opening day of the seminar included speeches by the Mayor of the Kuala Lumpur City Hall and the Governor of the Bangkok Metropolitan Administration.
- 13 November 2000 Talked with employee of Bombardier Transportation working on projects in Kuala Lumpur and Singapore.
- 15 November 2000 Meeting at Ampang offices. Talked with manager of STAR LRT System 1 at offices of STAR operations.
- 17 November 2000 Meeting with journalist from *The Star*
- July 2001 Meeting at office of Taylor Woodrow with British consultants involved in the design and implementation of the STAR (LRT System I).
- 17 July 2001 Meeting at Dewan Bandaraya Kuala Lumpur (Municipal Hall) Urban Transport Division.
- 19 July 2001 Meeting at office of Gamuda Bhd, private expressway concessionaire.

- 19 July 2001 Meeting at MacTRANS (Transportation Research Institute), University of Teknologi Shah Alam
- 20 July 2001 Meeting at PUTRA LRT System II head office
- 20 July 2001 Meeting at the University of Malaya, Department of Political Science.

### **S i n g a p o r e**

- 16 March 2001 Seminar Presentation at the National University of Singapore's Department of Geography.
- July 2001 Library research at the National University of Singapore; meetings in the Departments of Sociology, Economics, and Geography.
- July 2001 Meetings at Nanyang Technological University Centre for Transportation Studies, School of Civil and Structural Engineering.
- 10 July 2001 Meeting at Land Transport Authority

### **Melbourne**

- 27-29 July 1999 Participant in "Expert Meeting on Sustainable Transport", APEC Center for Technology Foresight, Victoria University.

### **Perth**

- 7-9 October 1999 Asia Research Centre conference, "Shaping Common Futures: Case Studies of Collective Goods, Collective Actions in East and Southeast Asia" Murdoch University.

### **Seoul**

- 22-27 July 2001 Presentation of refereed paper, "Roads Before Rail: Development of Expressways and Mass Transit in Bangkok and Kuala Lumpur", at the World Conference on Transport Research, Seoul, South Korea.

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<http://www.putralrt.com.my/index.asp>

Kuala Lumpur Central Station

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KTMB (Malaysia National Railways and KTM Kommuter)

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Renong

<http://www.renong.com/>

Park May Berhad

<http://www.parkmayberhad.com/>

Multimedia Super-Corridor

<http://www.mdc.com.my/>

## **Singapore**

Land Transport Authority (LTA)

<http://www.lta.gov.sg/>

Singapore Mass Rapid Transit (SMRT)

<http://www.smrtcorp.com/>

Singapore Bus Services

<http://www.sbstransit.com.sg/>

## **Bangkok**

Bangkok Transit System

<http://www.bts.co.th>

Metropolitan Rapid Transit Authority

<http://www.mrta.or.th>