During a period of economic reform, the People’s Republic of China has emerged as an important market for multinational automobile manufacturers and a source of concern for “sustainable transport” advocates worried about the long-term sustainability of systems based on private automobiles and fossil fuels. Much of the growth in China’s motor vehicle fleet and the negative consequences of that growth has been concentrated in China’s large, economically dynamic coastal cities. Based on a large standardised 1995 database on urban transport, this paper compares characteristics of three of China’s largest cities with cities around the world. This international comparative perspective suggests that in 1995, Chinese cities still had exceptionally high use of non-motorised and public transport modes. However, some characteristics of these cities indicated a high potential for extensive and rapid growth in private motor vehicles which could generate significant problems in the future. In particular, the relatively high population density and lack of reserved public transport routes suggested that the potential for highly concentrated negative impacts were in place, while the means of moving large numbers of people with lesser polluting modes of transport than the private motor vehicle were not in place. Finally, data on investment in public transport and freeways indicated that in the early 1990s the conditions were being created for rapid and continued motorisation. While in 1995 China’s cities in some ways approximated a “sustainable transport” ideal, this is likely to have already changed substantially.

Transport motorisation in the People’s Republic of China (hereafter, “China”) has become a focus of global attention. Proponents of motorisation worldwide view China as one of the last large frontiers for a number of private corporations which depend on the continued growth and expansion of automobile manufacturing and related infrastructure. In the 1990s, China’s government decided to promote automobile manufacturing as a pillar of industrialisation. Nationally, motorisation in China is undergoing rampant growth with vehicles increasing at about 15% per year, total automobiles increasing at 25% per year and privately owned automobiles by 50% per year; at this rate, by 2020 China will have between 176 and 234 million vehicles compared to 14 million in 1997. The higher number represents a similar number of vehicles in the entire USA today, on about the same land area. China has been recognised as important by automobile manufacturers: in 1994 Ford Motor Company’s Executive Vice-President identified China as his “number one priority”. While ensuring the continued prosperity of multi-national vehicle manufacturing firms, this will also have major global public impacts. On a global level, given technologies and fuels largely similar to those of the present, a car for every family in China would produce carbon dioxide emissions that would significantly affect the global climate. It has been suggested that this would offset any future emissions reductions achieved in other countries.

It is China’s large coastal cities where most potential consumers of automobiles are currently located, and it is these cities where the private and public impacts of motorisation are now emerging. It is these cities where many advocates of “sustainable transport”, generally concerned over the negative impacts of the use of motor vehicles in urban areas (as well as global implications), have focused their attention.

This paper compares 1995 data aggregated for three of China’s largest and most economically dynamic cities, with cities from 10 other clusters of cities (Table 1). The source of the data is the Millennium Cities Database for Sustainable Transport, which is the only source of a large and standardised set of transport data on urban areas from a wide range of nations and continents. From early 1998 until 2001 the International Union (Association) of Public Transport (UITP) funded this collection of data from 100 cities in 50 developed and developing nations on all continents. Up to 175 entries of primary data were made for each city, depending on the level of administrative complexity and multi-modality of the transport systems. The duration of the project is indicative of the long periods required for collection, release,
acquisition, and collation of international data before analysis can even begin. By the time the database had been finalised and released in 2001, the 1995 data were already 6 years old.

The analysis in this paper is based on aggregation of the data from individual cities in clusters of cities organised by regions (Africa, Australia and New Zealand, Eastern Europe, Latin America, Western Europe), nations (Canada, China, and the USA), and incomes (High Income Asia and Low Income Asia). For the purposes of analysis in this broad overview, the city clusters are described as low income and high income on the basis of Gross Domestic (or Regional) Product (GDP) per capita in US dollars (USD) of the functional urban region, rather than the state, province or country in which the city resides. As in any binary division of a large number of items, there are some cities on or close to the margin of 10,000 – 14,000 USD which could have gone either way. Sixteen of the one hundred cities included in the Millennium Cities Database are excluded from this analysis because of incomplete data.

This paper serves to describe a “snapshot” of Chinese cities in global comparison in the midst of a period of rapid change. The following discussion summarises

<table>
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how the eleven world regions compare to each other on the different factors, highlighting the position of the three cities in China.

2.1 Modal split

Perhaps the most distinguishing feature of the Chinese cities was their high reliance on non-motorised modes of transport in 1995; a worldwide high of 65% of all urban trips were made by these modes, which are arguably the most sustainable (Table 2). Based on this modal split, the Chinese cities were in a class of their own. This pattern was accentuated by the accumulated growth between the 1960s and early 1990s of bicycle ownership and use, which was supported by declining quantity and quality of public bus services, low personal incomes, and subsidies for workers to purchase bicycles.

The other major classes of cities based on modal split were the automobile dependent wealthy cities (Australia/New Zealand, Canada, and the USA, where between 79% and 89% of daily trips were by private transport), the wealthy cities in which public transport and non-motorised modes continued to play a significant role (Western Europe, High Income Asia), and the low income cities in which public transport and non-motorised modes maintain large shares, serving large urban poor populations, while the wealthy use private motor vehicles (Low Income Asia, Latin America, Africa, Middle East, Eastern Europe).

Much of the description following in this paper can be best interpreted with reference to the modal split averages for the city clusters.

2.2 Private motorised transport

2.2.1 Vehicle ownership

Globally there was an enormous variation in the magnitude of private motor vehicle ownership in 1995. The Chinese cities had a mere 26 cars per 1,000 people. Wealthy cities in North America, Australia, and New Zealand led the world in car ownership with averages of...
over 500 cars per 1,000 people.

However, the relatively low levels of cars owned in the High Income Asia, Low Income Asia, and China clusters in 1995, were at least partially offset by relatively high levels of private motorcycles, which formed a significant part of the transport system in those cities.

2.2.2 Car and motorcycle usage

Car usage was lowest in the Chinese cities, where a mere 814 car passenger kilometres per capita represented just 4% of the total of over 18,000 for USA cities. This range was wider than that for vehicle ownership. Similarly, the relative difference in the level of car use between the USA cluster and the high income European and Asian clusters was proportionately greater than the difference between levels of vehicle ownership. This is likely related to land use factors and the viability of other modes for various trip purposes.

In the Chinese and Low Income Asian clusters, motorcycle passenger kilometres accounted for a particularly large share of over a quarter of total private motor vehicle passenger kilometres. While the absolute number of motorcycle passenger kilometres per capita was also high in the High Income Asian cities, these accounted for a lesser percentage of 9% of total private motorised mobility. High income Taipei stood out among the wealthy cities with motorcycle usage representing 35% of private motorised mobility. This figure has likely declined since then with the opening of large sections of busways and urban railways in the late 1990s.

Usage of motorcycles relative to cars was comparatively small in other high income cities; ranging from 0.25% in the USA cities up to 1.90% in Western European cities. There is some evidence that motorcycle use has flourished in high density, congested urban areas where segregated public transport is of poor quality. They are the most manoeuvrable motorised mode for avoiding traffic queues and the most affordable form of motorised private transport for moderate income people. As well, they are a major cause of air pollution, noise, traffic danger and transport deaths in these cities.

The use of automobiles in cities is linked closely to the provision of road and parking infrastructure. The USA city cluster had the highest availability of freeway per person in the world, followed by the Australia/New Zealand and Canadian cities with 83% and 78% as much respectively. Outside of these three regions freeway provision falls away rapidly, especially in Latin American and Chinese cities (only 2% of the US level). The other 8 regions altogether averaged only 28 metres of freeway per 1,000 persons compared to 156 in US cities. Cities with the highest freeway provision had the highest average speed of general traffic (44 to 49km/h in USA, ANZ and CAN clusters). The other cities with considerably lower freeway provision achieved only 29km/h average road system speed. Since as early as 1974, it has been shown how urban freeway provision is directly associated with higher car and energy use in cities. The mechanism for this, in terms of longer travel distances rather than savings in time, has been explained elsewhere.

2.2.3 Energy

The level of automobile dependence in cities has large implications for resource consumption and transport externalities. The data show an extraordinary imbalance in energy consumption, with US cities leading the world at over 60,000 Mega Joules (MJ) per person of energy used for cars and motorcycles. This was twice as high as the Canadian and Australian cities, and 4 to 6 times more than the Western European and High Income Asian cities. Even cities in the Middle East, where most oil is produced, averaged only 10,600 MJ per person. China’s cities consumed a mere 2,500 MJ per person in private transport, which meant that a US city of 400,000 people consumed in one year the same amount of private transport energy as a Chinese mega-city of 10 million people.
The data in Table 5 illustrate the high energy requirements of urban transport based on private motor vehicles. Energy consumed per passenger kilometre in public transport in all cities was between one-fifth and one-third that of private transport, with the exception of the USA cities where it was somewhat higher. Energy used in public transport (a lot of which was electric energy and not dependent on oil) was also a minor contributor to overall passenger transport energy use. In higher income cities it ranged from only 1.3% of the total (USA cities), to 13% of the total (High Income Asia cities) in which public transport played a substantial role. In the lower income cities where cars were used much less, public transport accounted mostly for around 15% to 20% of transport energy use.

2.2.4 Emissions

Local transport emissions of carbon monoxide, volatile hydrocarbons, nitrogen oxides and sulfur dioxide are important determinants of urban air quality. The per capita emissions rates from transport for these pollutants varied according to both the modal split (Table 2), as well as characteristics of the motor vehicle fleets and their maintenance. US, Canadian and Australian/New Zealand cities clearly led the world in transport emissions per capita with between 179 and 265kg per capita per year (VHC, CO, NOx, and SO2 combined). By contrast, Western European and High Income Asian cities, where car use was lower and emissions controls were strict, generated only 37 to 98kg per capita.

While the lower income cities had much lower motor vehicle use than higher income cities, they had comparatively high transport emissions measured in terms of the ratio of transport emissions to total vehicle kilometres by private and public motorised modes. In high income cities this ratio was consistently around 0.02 (Table 6). In lower income cities it ranged from 0.04 to 0.08. This means the transport systems of the lower income cities were emitting pollutants at between twice and four times the rate per kilometre of higher income cities.

The final issue that the data reveal about transport emissions in the global sample is that whilst per capita emissions were higher in the low-density, auto-dependent regions, the emissions per urbanised hectare were clearly lower. In the high density cities, especially in the Middle East, Low Income Asia, and China, emissions were highly spatially concentrated. This led to more concentrated impacts and higher exposure (e.g., USA cities averaged 3,600kg per urban hectare, whereas Low Income Asia cities averaged 13,500kg per urban hectare). In 1995, the three Chinese cities had very high levels of transport emissions per capita and per hectare, in spite of a relatively low level of motorisation (Table 6).

Cars and motorcycles had huge impacts even at relatively low ownership levels in dense urban environments. In the lower income cities, there are social equity dimensions to this problem as well: urban transport priorities directed primarily towards facilitating car travel through new freeways and parking facilities, can threaten already viable urban transport systems that operate with...
comparatively low car use and provide effective transport services to the majority.

2.2.5 Transport deaths

While air pollution is linked to deaths, which by some accounts exceed those resulting from automobile accidents, the data discussed here on transport deaths is solely for transport accidents. These transport fatalities are closely related to automobile dependence, with US cities at 12.7 deaths per 100,000 people clearly leading the other high income regions, which ranged from 6.5 in Canada to 8.6 in Australia and New Zealand. In other words, transport deaths in high income cities tended to be a function of exposure to car travel, though the trend seemed to be downward in response to superior vehicle technology\textsuperscript{11}. However, the pattern was confounded by the lower income cities where, despite much lower car use, deaths in transport ranged from 8.6 per 100,000 in Chinese cities up to 27.6 in Latin American cities. Some important factors in this disproportionately high death rate appear to be the clash between the onset of motorisation and the traditional non-motorised modes, poor driver behaviour, driver training and traffic law enforcement, lower standard road systems, and policing that privileges fast motor vehicle movement over the safety of pedestrians and cyclists.

Transport deaths per billion passenger kilometres of motorised travel casts the more auto-dependent regions in a better light and further emphasises the high fatalities in low income cities. However, the higher death rate per passenger kilometre in the less auto-orientated regions was partly due to the fact that passenger kilometres by non-motorised transport, which were much higher in these regions (see modal split evidence), are not included in the denominator, but the deaths are included in the numerator.

2.3 Public transport patterns

2.3.1 Public transport service levels

Public transport supply was lowest in Chinese, Middle Eastern, and US cities. In 1995, Chinese cities still relied very heavily on non-motorised modes, and public bus systems were low in quality and quantity and urban rail contributed negligibly. US cities, although having had some extensive transit systems earlier in the twentieth century (e.g., Los Angeles’ extensive rail system), have had a long history of decline in public transport, notwithstanding a recent renaissance\textsuperscript{12}. The Western and Eastern European cities, High Income Asian cities, Latin

\begin{table}
\begin{tabular}{lcccccccccccc}
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 & Total transport deaths per 100,000 people & 15.2 & 27.6 & 18.0 & 11.3 & 10.8 & 7.1 & 8.0 & 8.6 & 12.7 & 6.5 \\
 & Total transport deaths per billion passenger kilometres & 37.3 & 47.3 & 30.4 & 29.1 & 19.6 & 9.6 & 10.8 & 6.8 & 7.0 & 7.1 \\
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\end{tabular}
\end{table}

\begin{table}
\begin{tabular}{lcccccccccccc}
\hline
 & Total public transport seat kilometres of service per capita & 2,699 & 4,481 & 5,450 & 1,245 & 4,170 & 4,213 & 4,995 & 3,628 & 1,557 & 2,290 \\
 & Rail seat kilometres per capita (Tram, LRT, Metro, Sub. rail) & 402 & 316 & 1,715 & 126 & 2,479 & 2,609 & 2,262 & 2,470 & 747 & 676 \\
 & Percentage of public transport seat kms on rail & 15 & 7 & 31 & 10 & 59 & 62 & 46 & 68 & 48 & 29 \\
 & Overall average speed of public transport (km/h) & 18 & 18 & 31 & 21 & 21 & 26 & 30 & 33 & 27 & 25 \\
 & * Average speed of buses (km/h) & 16 & 18 & 26 & 18 & 19 & 20 & 16 & 23 & 22 & 22 \\
 & * Average speed of metro (km/h) & 34 & 32 & na & na & 29 & 31 & 37 & na & 37 & 34 \\
 & * Average speed of suburban rail (km/h) & 33 & 41 & 34 & 37 & 38 & 49 & 47 & 45 & 55 & 49 \\
 & Ratio of public vs private transport speeds & 0.81 & 0.60 & 0.80 & 0.68 & 0.71 & 0.79 & 1.04 & 0.75 & 0.58 & 0.57 \\
\hline
\end{tabular}
\end{table}

Note: na = not applicable
American and African cities provided the highest quantity of public transport service. However, in terms of quality, the European and High Income Asian cities offered 46% to 62% of public transport services by rail, which was arguably more competitive with the private automobile due to high reliability and speed. In 1995, Chinese cities had the lowest per capita public transport service provision in the world and the lowest quantity of urban rail services.

### 2.3.2 Public transport usage levels

In 1995, there were two clear extremes in public transport use. The US cities stood out globally with the lowest rate of trips per capita on public transport (59 per annum), while the Eastern European cities had 712 trips per person per annum, or 12 times more per person than in the USA. This was also reflected in the overall modal split for all trips, where US urban residents used transit for only 3% of daily trips and Eastern European city residents used transit for 47% of all trips (Table 2). The other high users of public transport, either in terms of trips per capita or modal share of trips (but not always both) were High and Low Income Asian cities, Western European cities, Latin American, African and Chinese cities. For example, Chinese cities, despite poor transit service, had high per capita usage (375 trips per capita), but the overall share of total trips was low (19%) (Table 2).

### 2.3.3 Importance of rail and comparative modal speeds

The data highlight the integral role of urban rail systems in public transport systems with high ridership. In the high income cities, only the Western European and High Income Asian cities had public transport systems that captured a large share of the overall transport mar-
...ket and these were the cities where urban rail systems were most developed, especially in relation to their private transport equivalent, the urban freeway. The ratio of fully segregated transit infrastructure to urban freeways in these high income cities was over 3, while in the more automobile dependent high income cities the ratio ranged from 0.4 to 2. As mentioned earlier in the paper, a lack of segregated public transport infrastructure is linked to high use of motorcycles, which compete for passengers with bus systems that are engulfed in traffic\(^{13}\). Urban rail played an integral role in high income cities where it competed in terms of speed with private motor vehicles. There were no city clusters where the average speed of bus systems exceeded 26km/h and the overall average across the 11 regions was only 19km/h. In Chinese cities buses operated at an average 12km/h, or about the same speed as cycling. On the other hand, metro systems operated between 30 and 37km/h (average 34km/h), while suburban rail systems across the regions averaged 43km/h. When these speeds are compared to general road traffic speed, which averaged 34km/h across all regions, it can be seen that only rail systems compete effectively with cars.

Western Europe, High Income Asia and Eastern Europe, and to a lesser extent Australia and New Zealand, were the only regions with significant reserved alignments for public transport on a spatial basis. This consisted mainly of railways, but also a few physically segregated busways, mainly in Latin America\(^{14}\). All of the lower income city clusters, apart from Eastern Europe, which is the world leader, had comparatively scarce high capacity, reserved right-of-way public transport facilities.

In 1995, Chinese cities had particularly low provision of dedicated transit rights-of-way. However, in spite of this low amount, in the first half of the 1990s, most investment was in freeways, suggesting that lower priority was being given to public transport. Table 11 shows transport investment on new and refurbished public transport facilities and road investment (construction and maintenance by all parties) averaged over 5 years, and expressed in terms of percentage GDP per capita. The values for public transport investment ranged from a low of 0.18% in US and Canadian cities up to 0.86% in Chinese cities. Investment in the High Income Asia cluster was most evenly divided between public transport and roads at 0.61% and 0.84% of GDP respectively. This investment was reflected in the high provision of segregated public transport infrastructure, service, and use. Although the Chinese cities had the highest public transport investment as a percentage of metropolitan GDP among all of the clusters, the investment for roads was even higher still, at 3.17% of GDP. The US and Canadian cities had the greatest orientation towards road investment, which exceeded public transport investment by 4.8 times. These patterns were partly reflected in the level of segregated transit infrastructure and freeways in each region, as discussed above. In the first half of the 1990s, Chinese cities had the highest ratio of road investment to public transport investment in the world outside of North America (3.7 times).

<table>
<thead>
<tr>
<th>Region</th>
<th>Percentage of metropolitan GDP spent on public transport investment</th>
<th>Percentage of metropolitan GDP spent on road investment</th>
<th>Total passenger transport cost as % of metropolitan GDP</th>
<th>Total private passenger transport cost as % of metropolitan GDP</th>
<th>Total public passenger transport cost as % of metropolitan GDP</th>
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<td>0.65 0.42 0.35 0.61 0.50 0.41 0.61 0.30 0.18 0.18</td>
<td>1.28 0.11 0.54 1.05 1.02 0.70 0.84 0.72 0.86 0.87</td>
<td>14.50 14.27 21.96 14.01 14.76 8.30 7.08 13.47 11.79 13.72</td>
<td>12.19 11.69 17.47 11.38 12.39 6.75 5.45 12.39 11.24 12.87</td>
<td>2.31 2.58 4.48 2.63 2.38 1.55 1.62 1.08 0.55 0.85</td>
</tr>
</tbody>
</table>

Note: The road investment figures for LAM cities is suspiciously low and may reflect missing road investment data, though requests for clarifications were met with negative responses.
2.4 Land use patterns

Land use patterns are important in helping to explain the macro patterns of urban transportation, especially the level of auto dependence\textsuperscript{15–18}. Provided here are two key descriptions of land use, urban density and the degree of centralisation of work (proportion of jobs in the CBD) (Table 12). The higher car use cities were low in population density and more decentralised in the location of jobs, while the higher density and more centralised cities had lower car use per person. Average densities ranged from lows of 15 per hectare in the US and ANZ cities up to 150 to 200 per hectare in the Asian cities, including Chinese cities. In the high income cities, 82\% of the variance in car passenger kilometres per capita corresponded with density. In the low income cities, where other factors such as extreme variations in income affected the outcome, still 47\% of their variation in per capita car use could be explained by density.

Job decentralisation affects the capacity of public transport to service the journey-to-work, a major market segment for public transport, and in both income groups of cities this is reflected in statistically significant higher car use in more decentralised cities. The extent to which metropolitan jobs remained in city centres varied from only 9\% in US cities up to as high as 29\% in Latin America. In China, 51\% of jobs remained in the city cores, although a strictly demarcated CBD was less easily identifiable in Chinese (and other low income) cities\textsuperscript{19}. Nonetheless, by the 1990s high density, low rise residential and finely grained mixed use neighbourhoods in central areas of China’s cities were being displaced by high rise commercial developments which were contributing to a greater separation of employment and residences\textsuperscript{20}.

Notwithstanding changes, Chinese cities in 1995 had very dense and centralised patterns of urban land use, which made them ideal environments for effective public transport and walking and cycling.

2.5 The economics of urban transportation

2.5.1 Public transport operating cost recovery

The preceding analysis indicates that in terms of motor vehicle ownership and use, the US and Chinese cities were at opposite ends of a continuum in 1995. However, in terms of cost recovery from the operations of public transport, the US and Chinese cities were at the same, low end of a continuum (Table 13). The lowest cost recovery on public transport was in the USA (36\% cost recovery), where public transit use declined in the early 1990s (but rose sharply between 1995 and 2000\textsuperscript{21}). Close behind, but for different reasons, the Chinese cities recovered only 41\% of their costs due to strictly controlled fares and relatively generous staffing levels on public transport systems. This is not an inherently negative situation when the commonly unquantified benefits of public transport use are considered (energy use, emissions, use of city land). However, in High Income Asian, Low Income Asian, and Latin American cities, where physical and economic conditions were conducive to mass
transit use, substantial operating profits accumulated, with operating cost recovery of between 133% and 156%.

2.5.2 The cost-effectiveness of private and public transport

The Millennium Cities Database includes all passenger transport investment and operating costs, which are expressed in Table 11 as a percentage of metropolitan GDP. This data allows for the assessment of the economic cost-effectiveness of passenger transport in different regions.

Within the higher income clusters, where GDP per capita was broadly comparable (20,000 USD to 32,000 USD), the more auto-oriented cities had more expensive transport systems. Expressed as a percentage of GDP, the cost of moving people in US cities was 12%, while in High Income Asian cities and Western European cities it averaged 7% to 8%. Public transport consumed a relatively small share of total costs, amounting to between 0.6% and 1.6% of metropolitan GDP. The High Income Asian cities had the biggest relative cost to public transport (1.6% of GDP), but they also had by far the largest use of public transport (46% of total motorised passenger kilometres compared to 19% in Western Europe). The cost-effectiveness of public transport in High Income Asian cities is demonstrated by the fact that 5.5% of GDP had to be expended to move 54% of motorised passenger kilometres by private vehicles, whereas only 1.6% of GDP had to be spent to move the other 46% on public transport (see further below).

In the lower income city clusters the picture was significantly different, where due partly to lower wealth (GDPs per capita of 2,366 USD to 5,951 USD), the percentage of GDP consumed on passenger transport was generally higher, ranging from 11% in Chinese cities up to 22% in African cities. The average for all lower income regions was 15% compared to 11% in higher income regions. Again, public transport cost accounted for lesser expenditures of between 2.3% and 4.5% of GDP (average 2.8%).

If we take the ratio of the percentage of GDP expenditure required to move a given percentage of the total motorised passenger transport task for the two sectors, the results shown in Table 14 are obtained. Data are derived by dividing the respective total private and public transport passenger costs as a percentage of GDP, by the respective percentage of total motorised passenger kilometres moved by private and public transport in each region, and then taking the ratio between cars and public transport. Public transport was either equal to or greatly more cost-effective than cars in all regions except the US where the car cost relative to the task performed was 60% that of public transport. Within the wealthy cities, the opposite circumstance to this was in the High Income Asian cities, where cars were almost 3 times more costly than transit in terms of achieved market share. This is partially a function of conscious policies, like those in Singapore and Hong Kong, to charge high prices for car ownership and use.

China’s cities in 1995 had comparatively sustainable urban transport systems, with the world’s highest levels of walking and cycling. Among advocates of sustainable transport, Chinese cities have been held in high regard, precisely because they still support a high level of non-motorised transport. However, this advantage appears to be under increasing threat from some policies against bicycles and the sheer scale of motorisation. In addition, public transport use was high, in spite of relatively low service provision and a lack of mass transport with reserved rights-of-way. Specifically, there was a lack of development of effective bus priority systems and urban rail systems, which have led some high income Asian cities such as Tokyo,
Singapore, and Hong Kong to become “transit metropolises.” There was heavy reliance on bus systems which operated in general traffic and were thus too slow to compete effectively with cars, motorcycles and sometimes even bicycles.

The 1990s were a period of rapid economic and social change in China, stemming from market reforms initiated in 1978. It is likely that by the date of this publication, the Chinese cities have changed significantly from 1995, and to a greater extent than most other cities in the world. It is likely that these changes have moved away from a sustainable transport ideal, and towards greater motorisation, modified a little by the advent of metro systems in selected cities. Given the bias in transport infrastructure investment toward roads, at least in the first half of the 1990s, it is unclear whether public transport systems will be able to attract “choice” riders as incomes, aspirations and expectations rise. The fate of non-motorised modes is also still in the balance. The failure to address these issues will most likely result in cities that are more polluted than they were in 1995, and which carry a higher risk of death or injury in their transport system.