

IMPROVING ON THE GOVERNMENT'S PLANS FOR PUBLIC TRANSPORT

Summary

1 The government released a Land Transport Masterplan (LTMP) in January 2008 setting out its plans for improving Singapore's land transportation system in the coming years. Among the key findings was that the LTMP recognised that public transport was falling behind private transport as the mode of choice for Singaporeans. One of the LTMP's strategic thrusts was therefore to remedy this.

2 However, the government's public transport plans fall short in several aspects. It did not sufficiently address problems such as a rapidly increasing vehicle population, falling public transport mode share, the monopolistic nature of public transport operators as well as social objectives such as the accountability, affordability and the environment.

3 This paper argues that the government has to be prepared to tax motor vehicles more and increase subsidies for public transport to meet its public transport goals. It also has to tighten and enforce higher service standards from public transport operators, as the current state of weak competition is an insufficient means of improving their standards, as well as do more to address social objectives that cannot be fulfilled by the market alone.

Background

4 The LTMP identified three challenges: increasing travel demand but limited land, declining public transport mode share as well as changing demographics and expectations. To meet these challenges, the LTMP proposed three strategic thrusts: making public transport a choice mode, managing road usage and meeting the diverse needs of the people.

5 In this context, the highlights of the LTMP included centralising the planning of bus services under the Land Transport Authority (LTA), greater contestability for the market in the bus and rail industries, doubling the rail transport system (RTS) network by 2020, increasing bus priority measures, continuing the shift from ownership to usage charges for motor vehicles, limiting vehicle number growth and ensuring physical accessibility for all to public transport.

Key issues

6 In spite of the measures outlined by the LTMP, the government has overlooked several issues:

VEHICLE POPULATION	
<u>Rapidly increasing vehicle population</u>	The government has continued to move away from taxing vehicle ownership to taxing usage. As a result, the number of private cars has grown rapidly over the last few years (8.3% from 2004-2006), outstripping the growth in daily passenger journeys on public transport (5.4% over the same period) or road infrastructure (road lane length increased by only 1.2%).

	<p>This growth has contributed significantly to the nearly 10% increase in the number of vehicles per km of road from 224 to 247 from 2002-2006, which is now higher than cities like Tokyo (with a comparable figure of 200) and is approaching those of more crowded cities like Hong Kong (276).</p> <p>The government has tried to remedy this by lowering the rate of permissible growth of the car population from 3% to 1.5% from 2009 onwards for 3 years and by increasing road usage charges. But there are some problems with this approach.</p> <p>First, lower costs of car ownerships may continue cannibalise public transport mode share. Second, it is not certain that higher usage charges would alleviate congestion or encourage car owners to switch to public transport as usage charges may be too small a fraction of the large sunk costs of buying a car to affect the behaviour of motorists. Third, lowering car ownership taxes could understate the social costs of car ownership. Given Singapore's space constraints, every additional car on the road brings with it a higher burden on infrastructure and the environment than the car that came before it. As a result of ownership being under-taxed, the car population might have grown more rapidly than sustainable, which is evidenced by the government's belated attempt to rein in its growth. Fourth, a larger car population could crowd out buses, which might have the adverse effect of incentivising public transport operators to cut down the number of services.</p>
--	--

PUBLIC TRANSPORT INDUSTRY STRUCTURE

<p><u>Duopoly of public transport operators</u></p>	<p>The main public transport operators, SBS and SMRT, essentially maintain a comfortable duopoly¹ with little competition.</p> <p>There is weak competition in the RTS market, since SMRT and SBS are the only firms in the market. The government recognises this and has suggested shortening the licensing period for the various RTS lines from the current 30-year period, but this is unlikely to provide the strong incentives needed unless the government drastically shortens the period to something like 5 years. (The government still has not announced the revised licensing period.) Furthermore, the RTS does not face significant competition from bus lines, usually because competing bus routes are either controlled by the same companies that operate the RTS lines or have been terminated as part of the LTA's attempt to rationalise bus services to complement rather than compete with RTS lines.</p> <p>There is relatively more competition in the bus market, due to the larger number of bus operators and the introduction of new services such as the premium services. However, the LTMP announced that bus services will be rationalised by having all bus routes planned by LTA. Such a centralisation of route planning could stifle incentives for bus operators to innovate, result in some areas of demand being unmet as well as reduce competition - all of which would undermine the reasons for privatising the</p>
---	--

	<p>bus operators in the first place.</p> <p>This lack of competition in public transport is likely to be responsible for two problems which have contributed to the decline of public transport as a mode share. First, there has been an underinvestment in public transport capacity. Over the period 2002-2006, there has either been a slight increase or decline in public transport capacity, increasing by 0.7% for MRT (in terms of the average distance travelled by a train daily) and decreasing by 5.7% for buses (in terms of the average distance travelled by a bus daily), even as the population increased by 6% in the same period. Second, there has been a decline in service standards relative to rising public expectations, which the LTMP has identified as one crucial reason for the decline of public transport as a transport mode share. The LTMP also noted that bus standards are falling even further behind RTS standards.</p>
--	--

THE ROLE OF GOVERNMENT

<p><u>Government investment continues to lag demand</u></p>	<p>The above points illustrate the lack of market incentive for firms to invest in public transport. However, the government is also partly responsible for the problem, since it bears the burden of investing in infrastructure for both public transport and in other areas such as road transport.</p> <p>In this context, the Chairman for the Government Parliamentary Committee (GPC) for Transport Cedric Foo suggested in 2007 that the government should invest "more aggressively" in land transport infrastructure and expressed disappointment with the speed at which MRT lines are being built. Mr Foo suggested that infrastructure should lead rather than lag demand.</p> <p>In addition to public transport capacity, road capacity is also lagging. The vehicle population grew by 13.1% over 2002-2006, while road lane length grew only by 3.4% over the same period.</p> <p>The government's failure to plan ahead is likely to result in future bottlenecks that could hinder Singapore's growth. Some of these bottlenecks are already visible, such as the increased congestion on the roads and shortages in public transport capacity.</p> <p>In some respects the LTMP seems to represent the government's attempt to catch up with this under-investment. However, the next two points show how the government still continues to fail in this regard.</p>
---	--

<p><u>Overly conservative targets for public transport</u></p>	<p>By the LTMP's admission, the public transport mode share during morning peak hours fell from 67% in 1997 to 63% in 2004. The figure is even lower outside of morning peak hours - the overall daily number of journeys on public transport is only 4.5 million out of a total of 8.9 million journeys in 2007 (50.5%). This is low compared with Hong Kong (90%), Tokyo (68%), Mexico City (68%) or London (55%), all of which have lower population</p>
--	---

	<p>densities than Singapore.</p> <p>Yet LTMP has set itself the limited goal of boosting public transport mode share during <u>morning peak hours</u> to only 70% in 2020, even as the number of daily journeys is set to increase to 14.3 million by that time.</p> <p>Given Singapore's lack of space and the growing environmental pressures engendered by more roads and vehicles, this goal should be much higher so as to be commensurate with the strategic imperative of making public transport the mode of choice. On this measure, a conservative goal of 70% is liable to lead to under-investment in public transport. The LTMP is symptomatic of this, with measures such as lowering taxes on cars and reducing capacity (e.g. cutting down the number of direct buses in favour of a hub and spoke model) possibly detrimental to public transport mode share.</p>
<p><u>Limitations of government's cost-recovery principle</u></p>	<p>The LTMP continued to adhere to the government's principle of cost recovery for public transport operators, with government funding limited to investment in physical infrastructure. However, this approach has some limitations:</p> <ul style="list-style-type: none"> i. Buses are playing an increasingly secondary role compared with RTS due to service standards falling behind rising expectations as well as the huge investments in improving RTS capacity and infrastructure. The overall result is the transfer of patronage from bus to rail rather than the overall public transport market share actually growing. The decline in bus service standards needs to be arrested by large investments² something that bus operators might not be able to do on their own (the profits as percentages of revenue for the bus operations of SBS and SMRT were 5% and 2% in 2007, compared with 25% for SMRT's MRT operations). Instead of proposing more government subsidies, the LTMP focused on route rationalisation and cutting direct bus services to improve integration, measures that could actually accelerate the trend of buses falling behind the RTS. ii. The LTMP did not address the problem that future RTS lines are expected to be less financially attractive than existing ones. This could lead to operators cutting capacity elsewhere in order to drive up demand for their RTS lines. When the North-East line opened in 2003, its operator SBS kept several stations shut and removed SBS bus services that plied the same route as the train line because it was unprofitable. There are no plans in the LTMP to address similar problems when the Circle, Downtown, Thomson and Eastern Region lines open. Again, this will lead to the transfer of patronage from bus to rail rather than growing the overall public transport market share. <p>Clearly, there are cases where government subsidies are needed to achieve the goal of making public transport the undisputed transport mode of choice.</p>

SOCIAL OBJECTIVES

Perceived lack of accountability

The public transport operators, given their privatised nature and the government's relatively hands-off attitude towards them, are increasingly perceived as unaccountable to the public even though they are supposed to provide a public good. This is particularly in terms of fare setting and the service standards that these operators are supposed to uphold.

Insufficient emphasis on affordability for lower-income groups

LTMP was vague on how public transport fares were to be kept affordable for lower-income groups. This is a potentially serious concern, given the trends of rising fares and income inequality.

In September 2007, the government and public transport operators set aside S\$3 million in public transport vouchers (of which \$2.4 million comes from the government's Public Transport Fund) with families earning less than S\$1,500 a month entitled to receive one S\$30 voucher each. This might be insufficient considering the high rate of inflation that is eating into the stagnant wages of low income earners. Furthermore, a S\$30 voucher may not be a sizeable boost for low income families, considering that the voucher might be shared out between several members of the family.

Environmental concerns under-emphasised

Motor vehicles emissions, such as hydrocarbons and oxides of nitrogen and carbon, as well as particulate matters, are a significant source of air pollution. For example, particulate matter in the air - specifically, those smaller than 2.5 μm (of which 50% are contributed by diesel vehicles, and which are associated with health problems such as bronchitis, asthma and respiratory diseases) - is almost 50% higher than the standard set by the US and nearly twice as high as that set by the World Health Organisation. In 2005, the transport sector alone contributed 19% of Singapore's carbon dioxide emissions.

The government has not pushed quickly enough to switch motor vehicles to more environmental models. Furthermore, its policy of increasing the number of private cars on the road has probably exacerbated the environmental problem. It needs to urgently address this, considering that travel demand is expected to increase by 60% in 2020 and Singapore a highly populated area.

Singapore is some distance behind other world cities in terms of deploying environmentally-friendly public transport vehicles. This is largely because the government has left such decisions to public transport operators, who have unsurprisingly moved slowly towards replacing their fleet with such vehicles because of the high investment costs involved.

One result is that Singapore is moving too slowly towards acquiring more compressed natural gas-fuelled (CNG) taxis and buses, which are already being used extensively in the US, Europe and South America. Even New Delhi has a fully CNG-fuelled public transport fleet of buses and taxis. In contrast, SBS has 12 CNG-fuelled buses in a fleet of over 2,800. The

	number of CNG-taxis is increasing, but the numbers are still small compared with the overall taxi fleet and its growth is hampered by a lack of supporting infrastructure. This lack of infrastructure has also stifled the wider adoption of CNG by private vehicles.
--	--

Recommendations

7 It is clear that the government cannot continue to lower the ownership taxes on cars without undermining its own goal of improving public transport share. It also has to force public transport operators to improve their service standards as well as increase their capacity significantly in order to meet this goal, which could require the government to bend its principle of not subsidising public transport operators beyond infrastructure investments. It also has to redress the balance between RTS and bus, with the latter increasingly struggling against the former as it is constrained by tighter margins and worsening congestion on the roads. The government also has to pay more attention to social objectives that it previously neglected.

8 To achieve these objectives, the government should work within the framework of the current private-sector driven approach. It is not necessary to nationalise the public transport operators in order to force them to improve. The government can achieve this by significantly tightening the regulation of public transport operators, while at the same time increasing its subsidies to incentivise the operators to achieve various goals. At the same time, the government also needs to move to address various social objectives to meet rising public expectations as well as longer-term strategic goals. It also has to be prepared to revise its taxation of motor vehicles as well as public transport operators to fund these new initiatives.

9 Specifically, this paper suggests the following reforms:

<u>Goals</u>	<p>This should be set at a more ambitious figure, such as 75% of total daily journeys should be made by public transport. This figure is higher than Tokyo's and is still some way off Hong Kong's, but it will still be substantially higher than the present figure of 50.5%.</p> <p>Having an ambitious target would also justify hugely increasing the level of government funding for public transport as well as the increased taxes. It would also be a better guide for the government's long term planning, and might reduce the usual problem of government investment lagging demand.</p>
<u>Flexible route planning</u>	<p>Bus route planning can be centralised in LTA as suggested in the LTMP, with the following exceptions to allow a reasonable degree of market forces to operate:</p> <ul style="list-style-type: none"> i. To allow room for competition and to incentivise operators to address unmet demand that might have been missed by LTA, any bus operator is eligible to claim a pioneer subsidy³ for starting a new route for the first 2 years of operation. This would apply to basic, feeder and premium routes. Such a measure would also help to keep fares low in the initial period of implementing the new route.

	<p>ii. To improve network integration, operators of individual rail lines should be given control of existing feeder bus services that serve their stations. This would give rail operators the ability to plan an optimised local network around their stations, which is in line with the hub-and-spoke model advocated by the LTMP.</p>
<p><u>Increasing bus operator revenues</u></p>	<p>Bus operators should be allowed to collect rent for shops and advertisements at bus interchanges. This would provide another revenue stream for bus operators. Currently, interchanges are owned by LTA and the operators are tenants. Such rental income can be divided among operators depending on how many of their buses service the interchange. (This would be similar to the MRT where rental income at stations accrues to the line operator.) This would also diversify the bus operators' revenue stream and help to keep fares low.</p>
<p><u>Implementing rail subsidies</u></p>	<p>Subsidies should be awarded for first 2 years of operation for the successful bidder for a new RTS line⁴. This would also allow new RTS lines to start running earlier, rather adhering to the current stand that MRT lines should start running only when there are enough users to cover running costs. It would also reduce the need for operators to cut capacity elsewhere to drive up demand for their RTS lines.</p>
<p><u>Tighter regulation</u></p>	<p>The current approach to ensuring compliance with standards is too reactive. It is dependent on a mix of feedback from the public and the public transport operators reporting their compliance. Furthermore, it is a yearly exercise. This might not be enough to force the operators to do better. The PTC currently does not have the capacity for tighter policing since it only has a skeletal staff. The current system of sanctions is also too weak. For example, the LTA is only empowered to sanction RTS operators if they are found negligent in serious service disruptions, which leaves a lot of room for discretion about what constitutes "serious" or "negligent".</p> <p>Imposing more stringent regulations and tightening their enforcement are necessary because they are the only means of forcing SBS and SMRT to improve standards quickly since these companies are the dominant players in the bus and rail operations respectively.</p> <p>In order to raise service standards, a more proactive approach should be adopted. The PTC should be expanded to take on greater regulatory responsibilities. Monitoring and enforcement of service standards and licensing regulations should be centralised in the PTC, rather than divided between the LTA and the PTC as is the case currently.</p> <p>i. The PTC should have a suitably large staff to conduct <u>quarterly spot checks</u> on both bus and RTS services⁵. Lack of compliance with standards (e.g. frequency of service, cleanliness, timeliness) should be met by sizeable fines (in the range of \$100,000 or above) from the PTC at the end of every quarter.</p>

	<ul style="list-style-type: none"> ii. Bus service standards can be further tightened. For example, the quality of service (QoS) for buses adopted in July 2006 stipulated that by 2009, at least 80% of bus services and 90% of feeder bus services should leave their interchange within 10 minutes during weekday (excluding public holidays) peak periods. There is room for these guidelines to be substantially improved. iii. RTS service standards can be further tightened as well. For example, RTS operators can adopt the criterion of passenger journeys on time (which is a measure of on-time passenger journeys against actual passenger journeys in a month used by other rail operators) as another benchmark. To its credit, the LTMP has also addressed this by noting that LTA will revise the QoS for RTS so that commuters need only wait 2-3 minutes for a train during peak hour and 5-6 minutes during non-peak hours. Nevertheless, this should be backed up by tighter enforcement.
<p><u>Improving public accountability</u></p>	<p>The Government Parliamentary Committee (GPC) for Transport, which makes recommendations to the Minister for Transport regarding transport issues, is too skewed towards the ruling party.</p> <p>The GPC should include at least one member of the Opposition. It also should be given more direct oversight over the PTC, which is currently an unelected body even though it sets policy that affects the public. The GPC should also hold semi-annual public forums to explain and garner feedback on transport policies.</p>
<p><u>Environmental measures</u></p>	<p>Singapore should move towards a CNG-only public transport fleet, as the fuel is substantially cheaper than petrol and it lowers pollution considerably.</p> <p>This would require large investments, and therefore necessitates government intervention. The government needs to subsidise the acquisition of CNG vehicles by public transport operators. It also needs to subsidise providers to build more public CNG refuelling stations. This would in turn make it more attractive for motor-car owners and taxi companies to switch to CNG vehicles.</p>
<p><u>Ensuring affordability</u></p>	<p>The quantum of public transport vouchers should be increased. The government should look at subsidising a substantially amount of the average cost of monthly travel for lower income groups⁶.</p>
<p><u>Funding</u></p>	<p>The above measures would entail significant new spending on public transport. This would be in two parts: a one-off investment in new equipment such as CNG-vehicles, and an increase in yearly demands⁷ on the government's budget such as subsidies to encourage CNG adoption, an expanded PTC, improving bus services and ensuring affordability.</p>

	<p>Funding may be obtained from the following sources. First, the one-off investment can be paid out of the government surplus from previous budgets. Second, taxes on passenger cars should not be decreased. It should be increased, with the revenue going into subsidising public transport⁸. This would also help to shift people towards public transport. Third, given the larger subsidies proposed for public transport operators, the government would be justified in imposing extra taxes on their profits.⁹ Fourth, a separate windfall tax should be imposed on profits for the existing RTS lines (which are much higher than bus operations)¹⁰. This will help to redistribute revenue from rail to buses, and was actually one of the recommendations of the "Singapore Public Transport Industry Structure Review" study commissioned by the government.</p>
--	---

¹ One indicator of whether the firms are monopolistic in nature is the return on equity. SMRT Corp and SBS Transit posted ROEs of 21.2% at the end of financial year 2007, with both companies averaging nearly 19% each over the period 2004-2007. In comparison, SIA (Asia's most profitable carrier and which operates in a highly competitive setting) averaged an ROE of only 8.9% over 2003-2007.

² For example, the average age of SBS' fleet is 12.6 years which has even forced SBS to admit in its 2007 annual report that it was a challenge to meet the standards specified for the bus breakdown. SBS has partly rectified this by investing to ensure that 40% of its fleet will consist of new vehicles by 2009.

³ A subsidy of S\$500,000 should suffice, considering that this would be nearly 20% of the average yearly revenue about S\$2.3 million generated by one SBS bus service (SBS operates more than 230 bus services that generated S\$535 million in revenues in 2007). SBS alone introduced 23 new services in 2007. Hence, the annual cost of pioneer subsidies is likely to be S\$30-40 million.

⁴ This subsidy could be in the range of S\$15 million a year. This would represent about 20% of SBS' revenue of S\$68 million in 2006 on the North East line, which allowed SBS to break even in its rail business for the first time.

⁵ The cost of such an expansion would roughly be in the range of S\$15 million a year. This is assuming the cost of hiring a staff of 15 (this works out to S\$6 million at an average salary of S\$40,000 a year) and the rest of the money going into running expenses.

⁶ As noted earlier, the current programme of S\$3 million in public transport vouchers will provide S\$30 per family. If this is boosted to a more sizeable amount of S\$300 a family, the programme would cost S\$30 million a year.

⁷ The total subsidy outlay (not including that of investments in new vehicles) from endnotes 3 to 6 is estimated to be S\$100 million a year. As will be calculated in the next three footnotes, the increases in taxes should yield about S\$100 million a year.

⁸ The revenue from road taxes in 2007 was \$780 million. Increasing this yield by 10% will bring in nearly \$80 million even though the increase to a 1,600cc car owner is likely to be only around \$40 a year. That is a reasonable increase. Furthermore, the increasing number of people buying cars has actually boosted revenues from COE significantly - \$850million to \$1.2 billion from 2006-2007, which can also go towards subsidising public transport. The increased number of cars should also yield higher road taxes.

[9](#) A windfall tax rate of 5% on the before-tax profits for the SBS and SMRT (which made S\$59.4 million and \$142 million before tax in 2007) would yield about S\$10 million. The rate of 5%, which is nearly a quarter of Singapore's current corporate tax of 18%, is reasonable, considering that SMRT and SBS share a comfortable duopoly and are likely to enjoy the subsidies being proposed by this paper.

[10](#) A windfall tax rate of 9% on the RTS profits for the North-South and East-West lines will yield about S\$9 million on SMRT's profits of S\$103 million on those lines in 2007. The rate of 9%, which is about half of Singapore's current corporate tax of 18%, is reasonable, considering that SMRT made profits of S\$135 million after tax (on profits of \$142 million before tax) in 2007.